

MacWEEK

01.04.93 Volume 7 Number 1

THE NEWSWEEKLY FOR MACINTOSH MANAGERS

SPECIAL EXPO ISSUE

The State of MAC MANAGEMENT

MacWEEK's annual survey of Mac managers and their top concerns



System 7 status report



Are Budgets up, down or the same?



Cross-platform compatibility



The workload of support personnel

Plus: PowerBook QuickPoll

Expo highlights • Year in review

Five white mice are arranged in a circle on a white background. They are all facing outwards, with their heads pointing towards the center. Each mouse has a long, thin, pinkish-brown tail. The mice are positioned at approximately the 12, 2, 4, 8, and 10 o'clock positions. The text "Announcing a better mousetrap." is located in the lower-left quadrant of the image.

Announcing a better mousetrap.

NEC

Color sets tone for '93 Apple line

Portable Macs make move to color

Passive-matrix 165c expected next month

By Raines Cohen

Cupertino, Calif. — What do you call a PowerBook 180 with a color passive-matrix screen? As of next month, a PowerBook 165c.

The 165c will be followed this summer by a 33-MHz PowerBook Duo with an active-matrix gray-scale LCD and by an active-matrix

color LCD version of the 180. Duos won't gain color before this fall, when an active-matrix color system may hit the streets, sources said.

► **165c.** While the PowerBook 160 and 180 support color video output, some users have been clamoring for color in the main display. The high cost, large size, power requirements and limited availability of color LCD screens have hampered Apple's efforts to deliver a color portable.

See PowerBook, Page 224

Apple bringing color to PowerBook line

PowerBook	Winter/Spring	Summer	Fall
165c (passive-matrix color)			
2xx (active-matrix gray)			
1xx (active-matrix color)			
2xx (active-matrix color)			

Color-matching apps hook up with ColorSync

By Matthew Rothenberg

San Francisco — Third-party color-management systems are getting their hooks into Apple's new ColorSync extension to QuickDraw.

ColorSync will make its debut at this week's Macworld Expo here as part of Apple's rollout of imaging devices (see story, Page 225). The software will be available immediately through third parties and with Apple's new color flatbed scanner and inkjet printer. It also reportedly will ship with a future version of System 7.

ColorSync ships with a limited default color-matching method (CMM) that uses eight calibration algorithms to reduce color inconsistencies among peripherals such as printers, monitors and scanners. ColorSync reads software profiles of each device to discover their color characteristics.

Vendors of higher-end color-management products can take advantage of ColorSync's system-level architecture by providing their own CMMs and device profiles. Companies demonstrating their support for

See Imaging, Page 225

Spring crop of 68030-based Classics will lower the cost of entry-level color

By Carolyn Said

Cupertino, Calif. — Apple next month will ship its Color Classic, a compact color Mac priced at less than \$1,400, sources said. Later this spring, the company reportedly will deliver a more powerful Color Classic that eventually can be upgraded by adding a PowerPC processor.

► **Color Classic.** Slated to debut at Apple's Feb. 10 rollout, the Color Classic is essentially an LC II with a built-in Sony monitor, sources said. The LC II starts at \$1,239 without a monitor.

Like the LC II, the Color Classic will be based on a 16-MHz 68030 with a processor direct slot for expansion. It will come with a 10-inch Trinitron display that offers 512-by-384-pixel resolution at 76 dpi (the equivalent of Apple's 12-inch monitor); 4 Mbytes of RAM, expandable to 10 Mbytes; and an 80-Mbyte or 160-Mbyte hard drive.

The new CPU will provide built-



The Color Classic is based on a 16-MHz 68030 with a PDS slot; it supports eight-bit color on its 10-inch Trinitron display.

in support for eight-bit color, upgradable via video RAM to support 16-bit color. The machine will include a built-in microphone and will have sound and brightness controls on the case.

The Color Classic will sport a
See Color Classic, Page 225

Apple architecture promises mix-and-match networking

By Mitch Ratcliffe

San Francisco — Apple this year plans to release a stream of developer and end-user tools that will add more network sophistication and support for mobile clients of the PowerBook and Newton ilk.

As it makes its connectivity plans for the rest of the decade, the company is apparently paying equal attention to the Mac, the upcoming Newton personal digital assistants (PDAs) and future Apple servers based on both the 68000 and PowerPC chip families.

"The value-added services that we can deliver are support for mobile, anytime-anywhere computing so that

our customers can use PowerBooks or personal digital assistants from wherever they are," said Morris Taradalsky, vice president and general manager of Apple's Enterprise Systems Division. At a briefing last month, he outlined an umbrella technology, called the Apple Integrated Architecture, which will include connectivity, integration and service-access tools for use in the client-client-server network environment Apple has been touting of late.

Taradalsky also said Dylan, a dynamic programming language under development at Apple, is just one of several cross-platform appli-

See Enterprise, Page 226



Attaché packs up PB files

'Bags' will automate travel preparations

By Henry Norr

San Francisco — An Attaché from Santorini soon could send PowerBook users packing.

An innovative "travelware" package due late this quarter from Santorini Consulting & Design Inc., Attaché uses the metaphor of packing and unpacking bags to help users prepare their PowerBooks — or other mobile Macs, removable cartridges or transportable hard drives — for trips and to clean up on return. Bags are reusable documents that specify how the target disk is to be configured for a particular user, project or destination.

The program, tentatively priced at \$199, takes a broader view of mobile-computing requirements than previous PowerBook packages, which have focused primarily on file synchronization and power management. In addition to its file-management capabilities, the Santorini package includes some 10 other utilities specifically designed for travelers.

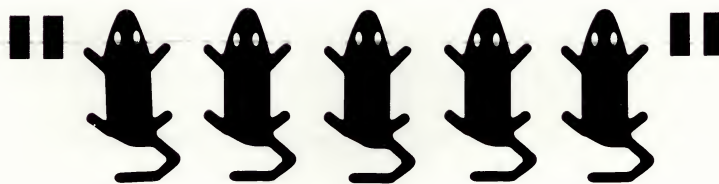
► **Bag building.** Among the functions that can be performed automatically by an Attaché bag are copying specific files or files that meet user-defined criteria (such as "all Excel spreadsheets modified in the last week on the server") from other disks and network volumes; synchronizing folders; offloading unneeded files and restoring them on return; and

See Attaché, Page 225

The NEC MultiSync® 4FG™. The ultimate monitor for your Macintosh®.



At NEC, we've developed hundreds of computer products expressly for Mac systems: from our highly-acclaimed MultiSync monitors, MultiSpin™ CD-ROM readers and Silentwriter® laser printers, to our Professional Graphics Series, which includes our new 27" MultiSync 3PG data monitor and MultiSync 6PG and 9PG Projection Monitors for images as large as 25 feet.



—MacUser, Magazine Aug. '92

The NEC MultiSync® 3FGx™ monitor. The least you should do for your Mac®.



In 1992, the only monitor to snag the coveted five-mice rating was an NEC monitor: the MultiSync 4FG. After running it and 13 others through the most rigorous technical evaluation they'd ever used for testing monitors, *MacUser* magazine concluded, "If you're looking for the sharpest display, the NEC MultiSync 4FG should be your top choice." What more can we say? Glad you asked.

Our **AccuColor™ Control System** prompted *MacUser* to make special mention of the "easy color adjustments." AccuColor lets you adjust on-screen colors, so if you're looking for mouse-tail pink, that's what you'll get.

If, however, color control is not a priority for you, you'll be very happy with NEC's MultiSync 3FGx monitor, which shares almost all of the 4FG's award-winning features. Both monitors produce sharp, bright images, crisp graphics and vibrant colors. An Invar shadow mask provides increased brightness without loss of focus.

Another big idea—the display area. The large 15" screen (13.8" active display area) coupled with FullScan™ capability for edge-to-edge images gives you a larger display area than typical 13" or 14" RGB monitors.

How do you make an NEC MultiSync monitor work with your Mac? Just plug it in, using NEC's free FG/Mac cable adapter. It works with the Mac's on-board video,

so you won't need an add-in video board.*

Both monitors are compatible with the Mac® II family, Quadra™ series, LC's, PowerBooks™ and PC systems. So you can use just one monitor for both types of platforms. *MacUser* noted the "powerful and versatile controls make switching from a Mac to a PC a snap."

And to make these monitors as user-friendly as possible, we've included ergonomic features such as a tilt/swivel base and up-front user controls. Plus, our Reduced Magnetic Field™ technology meets the strict Swedish MPR II guidelines for magnetic field emissions.

There are lots of reasons for considering an NEC MultiSync monitor for your Mac—the sharp, bright images, the vibrant colors, the large display area, the flexibility, the compatibility—to name five. And the 🖱️🖱️🖱️🖱️🖱️ to name five more.

For more information on our award-winning monitors, call 1-800-NEC-INFO (in Canada: 1-800-343-4418). Or for a complete brochure via fax, call NEC FastFacts™ at 1-800-366-0476, request #62234.

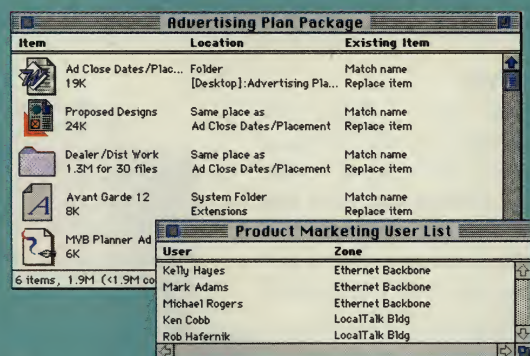
*For Macintosh 640 x 480 resolution, just attach NEC's FG/Mac cable adapter and plug into: Macintosh IIsi, IIfx, LC, LCII, IIfx, IIfx, Quadra™ 700, Quadra 900, Quadra 950, Performa™ 400, Performa 600, PowerBook™ 160, PowerBook 180, and the PowerBook 210 and PowerBook 230 with either the DuoDock™ or MiniDock™. Or with an add-in video card: Macintosh II, IIfx, IIfx, PowerBook 140, PowerBook 145, and PowerBook 170. Get the 640 x 480 FG/Mac adapter free by calling NEC at (312) 622-7427 8:30AM-5PM CST.

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Because ↑ is the way you want to go. **NEC**

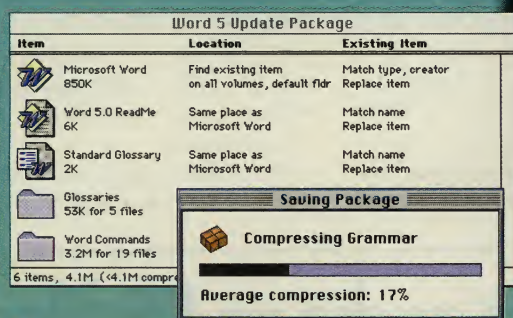
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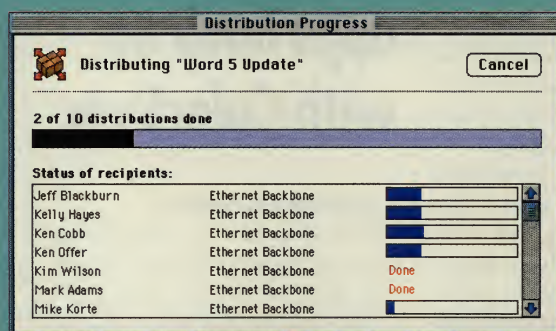
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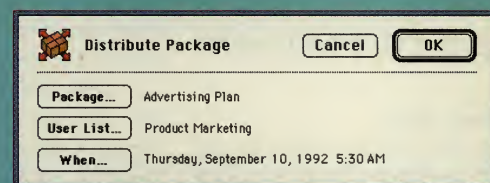
1 SAVE TIME

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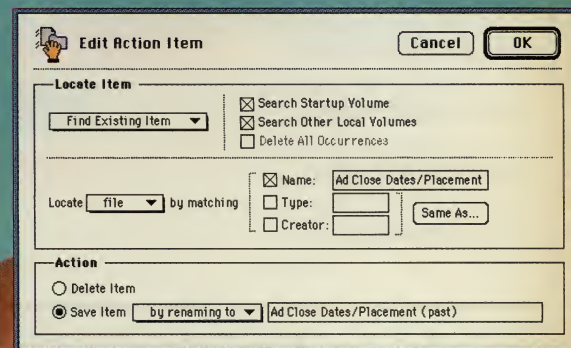
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New Apple software is key to third-party translators

Easy Open unlocks formats, platforms

By Raines Cohen

San Francisco — Third-party developers will use this week's Macworld Expo here to exhibit a number of document-translation products that work with a new Apple technology.

Apple officially will unveil Macintosh Easy Open, a set of system extensions and applications that manage the conversion of documents to other formats and platforms. The system will be licensed to developers who write translators and applications compliant with the Translation Manager application programming interface (see MacWEEK, Dec. 7, 1992).

These third-party vendors have tapped into Easy Open:

► **Mastersoft Inc.** will upgrade its Word for Word/Macintosh translators. Version 5.2 of the \$149 document-conversion package will let many applications directly open dozens of standard PC-compatible formats and several Mac document formats. The product supports bi-directional translations among all its supported document types, for a total of 2,500 translation combinations. Users can upgrade for \$39.95.

► **DataViz Corp.** will include Easy Open in Version 7.02 of its \$199 MacLinkPlus/PC and \$169 MacLinkPlus/Translators. The company said it modified its file-translation library to conform to Easy Open standards, letting users open PC and Mac files directly in many formats.

Both packages now also include Apple's \$79 Macintosh PC Exchange DOS disk-mounting utility. Previous versions came with Dayna Communications Inc.'s DOS Mounter

► **Equilibrium Inc.** this month will release a Easy Open-aware update to its \$299 DeBabelizer graphics-translation application. DeBabelizer will appear in the lists of suggested applications that Easy Open presents when users double-click on documents in any of the 90 formats it now supports, according to the company.

DataViz Corp. is at 55 Corporate Drive, Trumbull, Conn. 06611. Phone (203) 268-0030; fax (203) 268-4345.

Equilibrium Inc. is at 475 Gate Five Road, Suite 225, Sausalito, Calif. 94965. Phone (415) 332-4343 or (800) 524-8651; fax (415) 332-4433.

Mastersoft Inc. is at 6991 E. Camelback Road, Suite A320, Scottsdale, Ariz. 85251. Phone (602) 277-0900; fax (602) 970-0706. □

No Hands finds Common Ground

By Carolyn Said

Palo Alto, Calif. — No Hands Software this week will introduce Common Ground, a package that can transform any Mac document into "digital paper" that can be viewed and printed without the application that created it. The \$189.95 utility, slated to ship this month, will be followed in a few months by a Windows version, allowing cross-platform distribution.

Common Ground comprises:

► **Common Ground Maker**, a driver that prints documents to disk, substituting bit-mapped document representations for missing fonts. The bit maps are stored in three resolutions: 72 dpi for Mac screens, 100 dpi for Windows screens and 300 dpi for printing.

Because it uses bit maps, No Hands said, Common Ground will deliver a more exact rendering of the original document than Adobe Systems Inc.'s upcoming Acrobat, which instead relies on mimicking font metrics.

► **Common Ground Viewer**,

an application that lets users read, search, print and copy from Common Ground documents.

Freely distributable miniviewers will let users read but not search, print or copy Common Ground documents. A drag-and-drop utility will let System 7 users produce "digital paper" from existing documents. Documents consume about 7 Kbytes per page and can appear in color.

Randall Hull, owner of Design Consultancy in Sunnyvale, Calif., said he used Common Ground to send electronic copies of ads and copy to clients of his advertising agency. "Before, I'd spend a lot of money getting color prints done," he said. "Clients like that they can look at [comps] on screen — it's more interactive than paper."

No Hands said future versions will add features such as annotation, hypertext links between documents, and a table of contents or index.

No Hands Software is at 200 Page Mill Road, Suite 260, Palo Alto, Calif. 94306. Phone (415) 321-7340 or (800) 598-3821; fax (415) 321-2209. □

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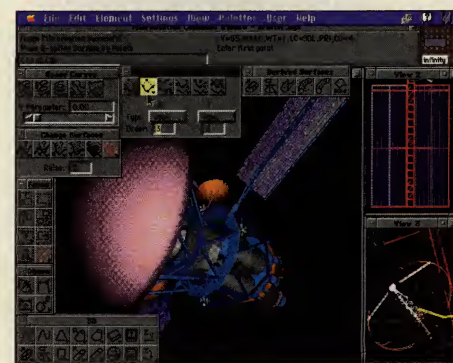
Cover illustrations by Scott Baldwin

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Portable printer pumps out PS

By Matthew Rothenberg

Kent, Wash. — Mannesmann Tally Corp. this week will introduce a portable thermal printer that packs a PostScript interpreter and a LocalTalk interface.

The MobileWriterPS, slated to ship in April for about \$1,000, will make its debut at Macworld Expo this week. The 8-pound device is based on a proprietary 6-page-per-minute thermal-transfer engine and prints to letter-, legal- or A4-size plain paper or transparencies at a resolution of 300 dpi.

The printer includes a PostScript Level 1-compatible interpreter licensed from Microsoft Corp., plus 35 Type 1 fonts, and it is compatible with Apple's LaserWriter driver, according to Mannesmann Tally. A PCL 4 interpreter and a

Centronics parallel interface are also included.

The MobileWriterPS has a 16-MHz 68000 processor and 2 Mbytes of RAM; memory cannot be expanded. The printer's rechargeable nickel-cadmium battery can print 150 pages per charge, the company said. Each wax-transfer ribbon also is good for 150 pages.

The device, which has an 80-sheet feeder built in, measures 11.4 by 8.7 by 2.3 inches. It comes with an AC adapter and printer cable. A carrying case costs \$60.

"That's a great deal," said Marc Boer, senior analyst with International Data Corp. of Framingham, Mass. At less than \$1,000, he said, the MobileWriterPS will be "the cheapest PostScript on the market. The print quality may not rival lasers, but for the price, you can't beat it."

In other portable-printer news, Eastman

Kodak Co. this week will ship a \$79 Quick-Draw interface kit for its \$549 Diconix 701, a 300-dpi, 3-ppm inkjet model that weighs in at 5.6 pounds.

Eastman Kodak Co. is at 901 Elmgrove Road, Rochester, N.Y. 14653. Phone (716) 724-4000 or (800) 344-0006; fax (716) 726-3758.

Mannesmann Tally Corp. is at 8301 S. 180th St., P.O. Box 97018, Kent, Wash. 98064-9718. Phone (206) 251-5524 or (800) 843-1347; fax (206) 251-5520. □

GlobalFax 2.1 to add OCR, support for Duo

By Nathalie Welch

Mountain View, Calif. — Global Village Communication Inc. this month will upgrade its GlobalFax software with optical character recognition and release a special version for PowerBook Duos. The company also will announce a new volume purchase plan for some modems.

► **GlobalFax 2.1.** The software, which will be bundled with Global Village's external TelePort and internal PowerPort fax modems, will use OCR technology from Calera Recognition Systems Inc. to convert incoming faxes into ASCII text. The OCR option will be bundled during January with all TelePort/Gold and PowerPort/Gold fax modems and offered to purchasers of other models for \$75. Version 2.0 users will be able to upgrade to 2.1 without the OCR software for free.

In addition, GlobalFax 2.1 will feature full rotation of received faxes and a new screen that provides space for calling-card numbers. The software also includes smart-page and smart-group resend.

► **GlobalFax Duo 2.1.** The \$179 package, which will offer the same features as GlobalFax 2.1, including the OCR option, works with Apple's new PowerBook Duo 210 and 230. It was written to be compatible with Apple's forthcoming \$319 Express Modem, which offloads most functions to the Duo CPU. Global Village hopes users will purchase its software as an alternative to Apple's new Express Fax, 9,600-bps send-and-receive fax software to be bundled with the Express Modem (see MacWEEK, Oct. 12, 1992).

► **Volume discounts.** The company will announce a \$500 discount on 10-packs of TelePort/Gold or PowerPort/Gold fax modems, both of which regularly cost \$499 each. PowerPort/Gold transmits faxes and data at 14.4 Kbps, while TelePort/Gold transmits data at 14.4 Kbps and sends and receives faxes at 9,600 bps. The 10-pack offer will not include the OCR option.

Global Village Communication Inc. is 685-B E. Middlefield Road, Mountain View, Calif. 94043. Phone (415) 390-8200; fax (415) 390-8361. □

Sony Trinitron® monitors. Now in assorted sizes.

There are a lot of good reasons to buy a Sony monitor.

They come in the most useful sizes: 14," 17," and 20." One just right for nearly every application.

They all have a Trinitron CRT with the unique one gun/one lens design that accurately aligns the three color beams for a crisp.



*PC Magazine Editors' Choice awarded July 1991, and Macworld Editors' Choice awarded March 1992, to Sony CPD-1304 Multiscan HG. © 1992 Sony Corporation of America. All rights reserved. Sony, Trinitron, Multiscan and Super Fine Pitch are trademarks of Sony.

ALSoft, Inline enter PB-util race

By Henry Norr

San Francisco — Two more utility vendors this week will jump into the PowerBook market with packages that provide improved power management, security and other conveniences.

ALSoft Inc. and Inline Design both plan to begin selling their just-completed programs,

minus final packaging, at Macworld Expo here. Both packages consist of multiple modules configured through a single control panel.

► **ALSoft's UP**, which will list for \$129 but sell at the expo for \$59, has 10 modules. The PowerBar module provides a customizable floating bar displaying estimated time remain-

ing on a battery charge and other status information. The Security module provides password protection at start-up, at wake-up after an interval of inactivity or on command. Other modules offer an array of sleep and backlight-dimming settings, menu bar indicators for disk and modem activity, no-click menu access, instant screen blanking or system sleep, and animated routines to highlight cursor location.

► **Inline's PB Tools**, written by Computer sysop Bill Steinberg, will list for \$99.95 but

sell at the expo for \$25. The program, described by Inline as offering "essentials without the frills," has four modules.

PowerWatch provides a menu bar battery- and drive-status indicator; a menu with sleep commands and an asynchronous Drive Wake option, which lets users continue working as the internal drive spins up; and logging of detailed statistics about battery usage, with a built-in graphing function and export option.

PowerControl offers sleep and backlight controls and a Deep Discharge button for reconditioning nickel-cadmium batteries.

SafeSleep's functions include screen blanking and basic password protection on start-up or wake-up, with optional display of custom text. (Users can bypass security by starting up with extensions turned off.) The PBKeys module lets users set hot keys and combine the arrow keys with the Control key so they function as Page-Up, PageDown, Home and End keys.

ALSoft is at P.O. Box 927, Spring, Texas 77383. Phone (713) 353-4090 or (800) 257-6381; fax (713) 353-9868. Inline Design is at 308 Main St., Lakeville, Conn. 06039. Phone (203) 435-4995 or (800) 453-7671; fax (203) 435-1091. □

RasterOps DuoMate will drive big screens

Santa Clara, Calif. — A new PowerBook Duo dock from RasterOps Corp. promises to help users take advantage of large color monitors and displays as they roam the road.

The DuoMate, to debut at Macworld Expo this week and ship by March for \$599, includes 1 Mbyte of video RAM, so it will be able to drive displays as large as 12 inches in 24-bit color, 16 inches in 16-bit color and 21 inches in eight-bit color. It also will support VGA video output, composite video with convolution, and NTSC or PAL (European) output.

The dock includes a stereo audio-out port and an Apple Desktop Bus port, as well as a pass-through button for the Duo's power switch. Unlike some other docks, it does not block the Duo's ports. It sports a 32-bit bus design.

The DuoMate can run on the Duo's battery power alone, without an external power source, to drive NTSC, PAL, or 12- or 13-inch screens.

RasterOps Corp. is at 2500 Walsh Ave., Santa Clara, Calif. 95051. Phone (408) 562-4200; fax (408) 562-4066. □

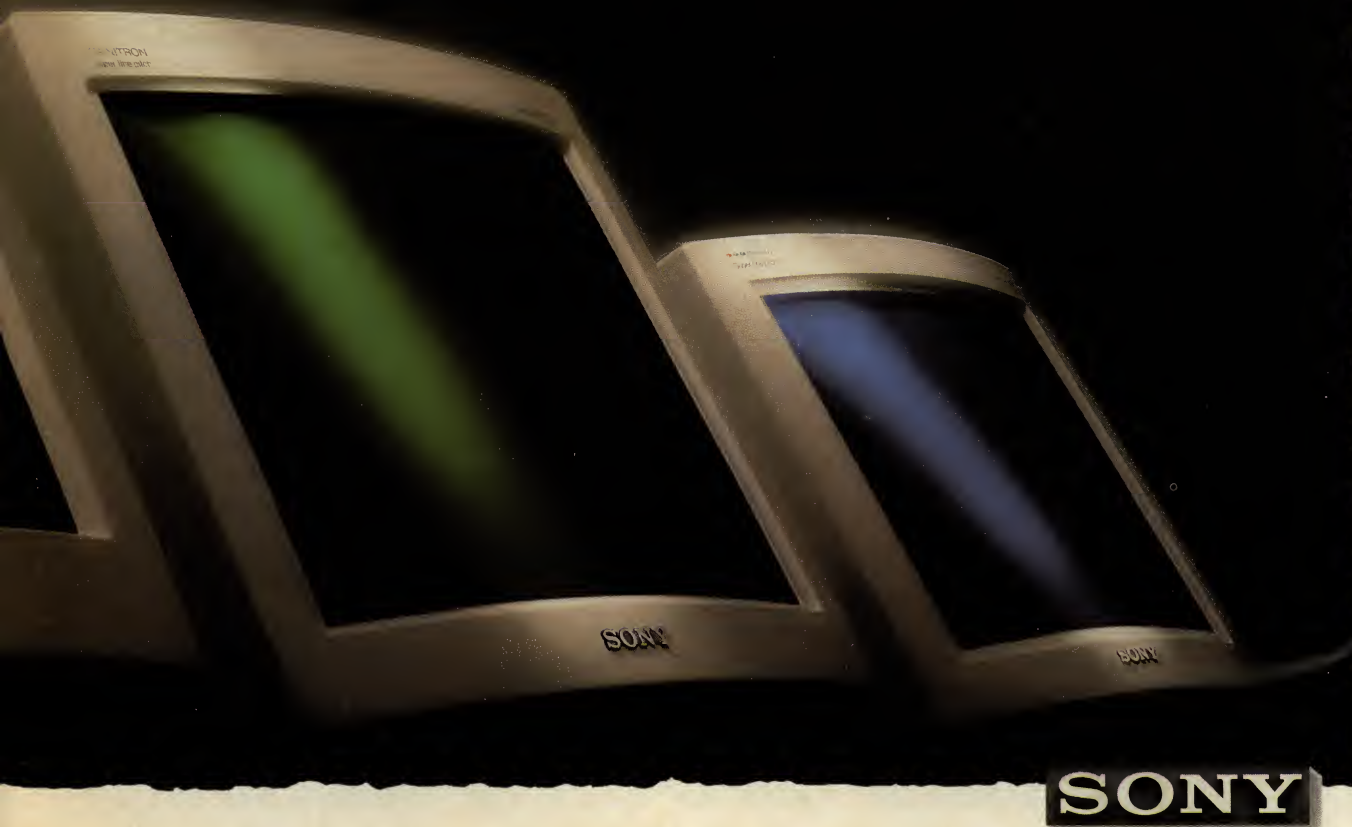
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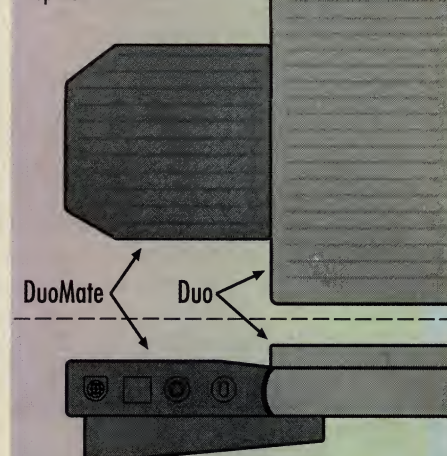
For more information and the name of a Sony dealer near you, just call 1-800-352-7669.



SONY

RasterOps DuoMate

Top view



Side view

NEVIN BERGER

MicroNet lines up new storage

PowerBook drive holds 250 Mbytes

By Kirsten L. Parkinson

Irvine, Calif. — MicroNet Technology Inc. will unveil a host of advanced storage systems at Macworld Expo this week.

► **PowerBook internal drive.** The PBi-250, a 2.5-inch mechanism with a capacity of 250 Mbytes and an average seek time of 16 milliseconds, is due next month for \$1,495. The company declined to identify the mechanism's manufacturer.

► **New SyQuest.** The MR-90c, available now for \$995, is based on a new SyQuest 88-Mbyte mechanism that can write as well as read 44-Mbyte cartridges. Owners of the MR-90, MicroNet's original 88-Mbyte SyQuest unit, can upgrade for \$215.

► **Duo Dock drives.** A trio of 1-inch-high, 3.5-inch internal drives for Apple's Duo Docks is slated to

ship next month. The 240-Mbyte DDi-240 and the 515-Mbyte DDi-515, priced at \$1,145 and \$2,095, respectively, will be based on Seagate mechanisms; the 340-Mbyte DDi-340, \$1,445, will incorporate a Conner Peripherals mechanism.

Average seek times are 12 milliseconds for the 240- and 340-Mbyte units and 10.5 milliseconds for the high-capacity drive.

► **Barracuda drives.** In March MicroNet expects to ship systems based on the Barracuda-1, a new 3.5-inch Seagate mechanism with a capacity of 1.4 Gbytes, an average seek time of 9 milliseconds, a spindle speed of 7,200 rpm and a sustained transfer rate of 4.8 Mbytes per second.

An external version, the SS-1400, will list for \$5,095; an internal Quadra version, the Q9i-1400, will be \$4,995; and the Q9i/i-2800R, a two-drive, 2.8-Gbyte Raven•040 array for the Quadra 900/950, will be \$9,990.

► **New DEC drive.** The Q9i-

1600, a 1.6-Gbyte internal drive for Quadras, is due at the end of the quarter for \$3,895. It will be based on Digital Equipment Corp.'s DSP-3160s, a new 3.5-inch mechanism with an average seek time of 8 milliseconds, a sustained transfer rate of 3.3 Mbytes per second and a spindle speed of 5,400 rpm.

► **NuPort-III.** MicroNet will show the NuPort-III, an improved high-speed SCSI adapter for NuBus Macs. The 7-inch-long card, sold only with selected MicroNet storage systems, will list for \$300, half the price of the NuPort-II.

► **Finder-mountable DAT drive.** The DAT disk-1000, a \$3,395 digital audio tape drive, will ship with software that lets users mount a 60-meter tape on the desktop as a 1-Gbyte volume. The Data DAT-format system, which features 20-second access times and automatic write verification, is based on a JVC mechanism.

► **DAT autoloader.** The SB-D16-4, a \$5,995 autoloader due in March, is based on Ardat's new Turbo Python DAT drive and DiamondBack autoloader. The full-height unit holds four cassettes, or about 16 Mbytes of data using the drive's on-board compression capabilities and 90-meter tape.

The autoloader, as well as other MicroNet DAT and streaming-tape drives, will be bundled with Version 2.0 of Dantz Development Corp.'s Retrospect Remote. Dantz's \$129 DiskFit Direct will ship with MicroNet's SyQuest and magneto-optical systems as well as disk drives with capacities up to 240 Mbytes.

MicroNet Technology Inc. is at 20 Mason, Irvine, Calif. 92718. Phone (714) 581-1540; fax (714) 837-1164. □

New SyQuest 88s write 44MB cartridges

SyQuest Technology Inc. this week will move to address a compatibility issue that has kept some users away from its 88-Mbyte removable-media drives by announcing a new model that can write as well as read 44-Mbyte cartridges.

Called the SyQuest SQ5110C, the new mechanism will be available through OEMs at prices expected to be about 5 percent to 10 percent higher than those of the original 88-Mbyte unit, the SQ5110.

Because the tracks on a 44-

Mbyte cartridge are wider than the read-write head of the 88-Mbyte mechanism, the new unit must make two erase passes before it can write new data to the disk. As a result, writes to a 44-Mbyte cartridge take about three times as long as to an 88-Mbyte cartridge.

The SQ5110C has an average seek time of 19 milliseconds, an average transfer rate of 1.25 Mbytes per second and an MTBF (mean time between failure) rating of 80,000 hours.

SuperMac Thunder II cards pack 2 DSPs to speed apps

By Neil McManus

Sunnyvale, Calif. — SuperMac Technology this week will introduce a new line of 24-bit-color display cards with built-in DSP acceleration for graphics programs.

SuperMac's new Thunder II line, to be unveiled at Macworld Expo in San Francisco and to ship in March, promises higher resolutions and faster QuickDraw acceleration than the company's existing Thunder cards.

SuperMac will offer three NuBus-based models of the new boards:

► **Thunder II Light**, priced at \$3,699, accelerates 24-bit color at resolutions of up to 1,152 by 870 pixels.

► **Thunder II**, \$4,999, accelerates 24-bit color at resolutions up to 1,360 by 1,024 pixels.

► **Thunder II HDTV**, \$9,999, accelerates 24-bit color at up to 1,920-by-1,080-pixel resolution (see MacWEEK, Dec. 14, 1992).

SuperMac will continue to offer its eight-bit Thunder/8 (\$1,499) and 24-bit Thunder/24 (\$2,999) NuBus cards, which accelerate at resolutions of up to 1,152 by 870 pixels.

All Thunder boards accelerate QuickDraw commands with a proprietary application-specific integrated circuit. The older Thunder cards and Thunder II Light speed QuickDraw by 2,300 percent, while the Thunder II and Thunder II HDTV speed it by 2,600 percent.

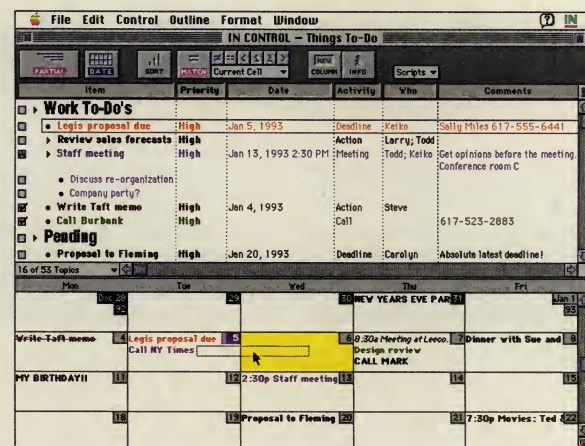
The Thunder II cards add a daughterboard with two programmable AT&T 16A digital signal process-

ing chips to speed graphics software.

The DSP daughtercard, developed by Storm Technology Inc., also accelerates JPEG (Joint Photographic Experts Group) compression and decompression up to 600 percent faster than software-only methods, according to SuperMac.

The Thunder II cards will come bundled with software that will tap the DSP to speed Adobe Photoshop 2.5 functions, such as Resize, Rotate and RGB-to-CMYK color transforms. It also will ship with DSP-capable Photoshop filters, including Sharpen Edges, Sharpen More, Unsharp Mask, Blur More, Gaussian Blur, Motion Blur and Despeckle.

The boards also will include free copies of Eastman Kodak Co.'s \$39



Attain's In Control 2.0 sports a new calendar view (bottom) and lets users check off completed activities. An included extension can sound alarms even without In Control open.

In Control 2.0's calendar feature tells users when to-dos are due

By Henry Norris

Somerville, Mass. — In Control originally was designed to tell users what to do, but starting this week it also will remind them when to do it.

Version 2.0 of Attain Corp.'s \$129.95 to-do list manager is slated for release at Macworld Expo in San Francisco. It features a new date view, a customizable calendar that shares the screen with the program's main multicolumn outline view. Outline entries with a date or time attached can be dragged into the calendar directly, and users can attach pop-up and audio reminders that are activated either by a reminder function built into the application or by an optional notification extension that works even when In Control is not open.

Portfolio Software Inc.'s Dyno-Page Lite utility, bundled with In Control 2.0, lets users preview and print calendars and outlines in popular personal-organizer page formats.

Other new features include:

► **Scripting.** Users can create scripts that automatically apply pre-

viously set formats, sort orders and display criteria to other documents. The feature can be used, for example, to limit the display to high-priority entries or to items associated with a specific project.

► **Check boxes for completed items.** New commands let users show and hide checked topics.

► **Automatic default values.** Users can specify the text to be entered in any column or have the program fill in the current date and time, tomorrow's date, the value of the cell above, or a sequence number.

► **Document linking.** System 7 users can attach a document or application to any item and open it automatically from within In Control.

► **Formatting options.** In Control now has more formatting options, including grid lines between topics or columns and a selection of outline-topic labeling systems.

Beta-tester Todd Weiner, a fund-raiser at the Museum of Natural History in New York, said the program helps him "keep track of hundreds of project proposals and grant applications without going through the formalities of setting up a database." With the new linking function, he and colleagues can go directly from abstracts of proposals, kept in an outline, to the full documents.

Upgrades are \$30, or \$10 to users who purchased in the past 60 days.

Attain Corp. is at 48 Grove St., Somerville, Mass. 02144. Phone (617) 776-1110; fax (617) 776-1626. □

For the record

In the Dec. 7 issue, Peter M. Fine's name was misspelled.

A chart in the Nov. 16 issue listing recently introduced fax modems should have said that PerfectData Corp.'s EasyModem 144MAC cost \$995. That price has since been reduced to \$676.

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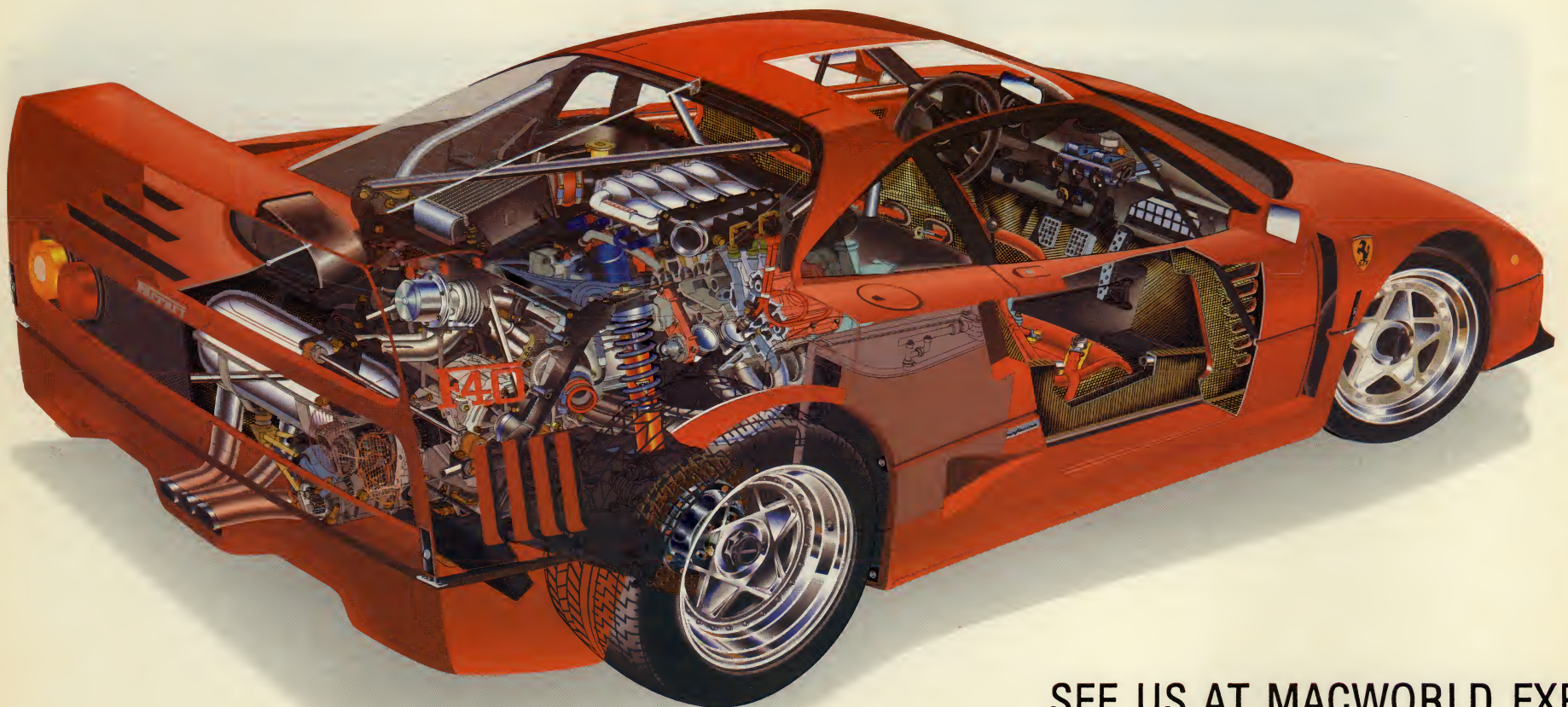
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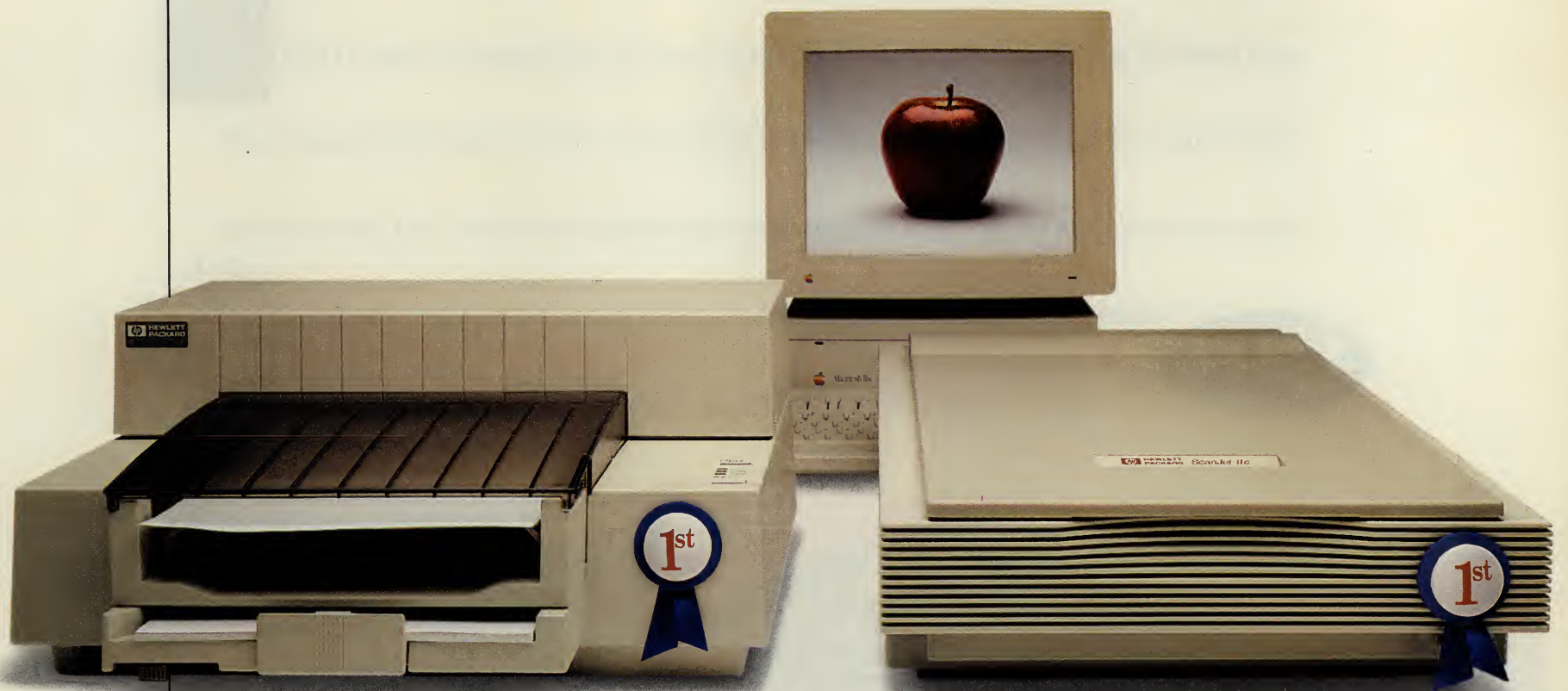
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show picks

The votes are in on the best and brightest new wares to be displayed at Macworld Expo this week.

PowerBooks and their accessories continue to be the hottest ticket. Overall, while the country is about to take a new direction, the Mac is holding a steady course.

powerbooks

With about half a million PowerBooks now in the world, expect to see plenty of companies providing accessories for computers on the go.

Motorola Inc. will offer expo goers a free, 30-day trial offer of Embarc software and a NewsStream pager, which will let roving users receive wireless messaging and daily USA Today news and weather briefs.

It'll be docks aplenty for Duo owners at the show. In addition to Apple's own offerings, you'll be able to see RasterOps Corp.'s DuoMate and E-Machines Inc.'s PowerLink DeskNet, along with tiny docks: Envisio Inc.'s Dynamic Duo, E-Machines' PowerLink Presenter and Computer Care Inc.'s new micro-docks, including a SCSI adapter.

Applied Engineering will show its unique cellular modem-voice-fax solutions, now shipping. Meanwhile, if you want to connect a PowerBook to an Ethernet network without an adapter, check out Sonic Systems Inc.'s PowerBridge.

Strategic Mapping Inc. will unveil Local Expert, a "personal navigator" application that includes maps and information about attractions, restaurants, hotels and current events in major cities. And Global Village Communication Inc. will introduce GlobalFax Version 2.1, which will support optical character recognition.

PowerBooks also are the rage in the utilities arena this season. Two new collections for notebook users

— UP from ALSoft Inc. and Bill Steinberg's PB Tools, published by InLine Design — will make their debuts; Palomar Software Inc. will ship On the Road, an extension that automatically carries out deferred printing and fax transmissions and remounts server volumes when connections are available; Symantec Corp. will bring its Norton Essentials for PowerBook (nee GUM); a slew of recently released synchronization packages will be on display; and insiders will get sneak peeks at a couple of upcoming packages that break the sync-your-files and save-your-battery mold.

productivity

ACI US Inc., having finally served up shipping versions of 4th Dimension 3.0 and 4D Server 1.0, the client-server implementation of its relational database, will put them on display at its booth.

For flat-file fiends, Claris Corp. will showcase the cross-platform capabilities of FileMaker Pro 2.0 for the Mac and Windows.

Meanwhile, Claris' new publishing division, Claris Clear Choice, will tout two of its newly acquired products: BrushStrokes, a color painting program, and Retrieve It!, a text-search program.

Mainstay will launch a new object-oriented database called Phyla. Objective Software Inc.'s SpreadBase, which wraps a spreadsheet

interface over a database engine, is finally shipping and will be on display.

Lotus Development Corp. will show off Version 1.1 of Lotus 1-2-3 for the Mac, and Microsoft Corp. will introduce the Mac version of its Open EIS Pak, a set of tools to build custom enterprise information systems using Microsoft Excel and other applications. And those who haven't yet seen Microsoft Word 5.1 will have a chance to try out the new version's customizable tool bar.

WordPerfect Corp. will show WordPerfect Works 1.2, its version of the BeagleWorks integrated package.

Business users have some fresh choices for creating presentations, including Microsoft PowerPoint 3.0 and Gold Disk Inc.'s Astound!.

connectivity

Several vendors are offering packet sleuths new network-management tools. Caravelle Networks Corp. will display the latest version of its network-management software, NetWorks 3.0, which includes support for SNMP and Novell IPX. Dayna Communications Inc. has extended the capabilities of Network Vital Signs, and The AG Group Inc. will show off a new packet-decoding technology called "thread intelligence" in the final beta version of TokenPeek.

Farallon Computing Inc. will show a way to make a Mac look and act like a Windows-equipped machine (or vice versa) with its cross-platform-compatible versions of Timbuktu.

pims

From funky floating clocks to applications that try to do it all, show goers can view a host of new options for managing their information.

ProVUE Development Corp. is suiting up Power Team, a low-cost package that integrates a full lineup of personal-management functions, including a Quicken-like checkbook.

For users who just need to know where to be and when, Now Software Inc.'s networkable Up-To-Date 2.0, Pastel Development Corp.'s Day-Maker 2.0 (now networkable) and Visionary Software Inc.'s First Things First 3.0 offer three approaches to scheduling. And Attain Corp. will be on hand with In Control 2.0, which adds a calendar and other enhancements to the to-do list manager.

On the contact-management front, check out Contact Software International Inc.'s ACT! for Mac and new versions of Advanced Software Inc.'s InTouch and Portfolio Systems Inc.'s Dynodex.



RasterOps will show its Editing Aces Suite, a new full-screen, full-motion video-production system. It includes a digitizer, a 24-bit graphics card, an encoder and Adobe Premiere 2.0.

display

Envisio Inc. will unleash its RAGE (Radically Accelerated Graphics Engine) 24-bit graphics board on expo attendees. Truevision Inc. will debut Bravado24, a full-color video digitizer with optional compression.

Full-screen, full-motion video-editing systems will be on display from RasterOps, SuperMac Technology and Radius Inc. SuperMac will roll out its PhotoSpeed system for Eastman Kodak Co.'s Photo CD. It includes an accelerated color graphics card, a CD-ROM drive and a pile of software. SuperMac also will debut Touch-screen display systems and its Thunder II line of graphics acceleration and display boards. Radius will show its latest Color Pivot display systems.

printers/scanners

Color imaging will set the tone at Apple's booth when the company finally takes the wraps off its color flatbed scanner and inkjet printer, both expected to ship with ColorSync, new system software for device-independent color matching.

A spectrum of color luminaries will jump aboard the ColorSync bandwagon with solutions, including scan optimization, color management and acceleration. They include Light Source Inc., Electronics for Imaging Inc., Kodak, Savitar Inc., RasterOps and Computation Inc.

Other new color devices include Tektronix Inc.'s Phaser 200 series of fast, plain-paper thermal-wax printers; LaserMaster Corp.'s upcoming thermal-wax model, expected to set new price lows; and Mustek Inc.'s Paragon 1200 color scanner.

On the monochrome front, Apple is expected to present its challenges to Hewlett-Packard Co.'s LaserJet 4M: the LaserWriter Pro 630 and 600, both of which use the same true-600-dpi, 8-page-per-minute Canon engine as HP's new laser printer. The company also will introduce a faster

graphics

Aldus Corp. will make a full-scale frontal assault on "professional" desktop publishers with Version 5.0 of PageMaker. Meanwhile, Quark Inc. will sell a new \$45 disk of XTensions called Red Hot & Publish; all proceeds will benefit the American Foundation for AIDS Research.

Computer artists will find plenty to get excited about at the show, including lots of cataloging programs: DeltaPoint Inc.'s new Freeze-Frame, Aldus' Fetch and Version 2.0 of Multi-Ad Services Inc.'s Search.

Multi-Ad also will showcase Version 3.5 of its Multi-Ad Creator, and Timeworks Inc. will sell the CD-ROM version of Publish-It! Easy 3.0.

Both budding and accomplished designers should check out the tear-off palettes, magic wand, and record and playback features of Fractal Design Corp.'s Painter 2.0.

Adobe Systems Inc. will tout Dimensions, a utility that turns 2-D art into 3-D; Photoshop 2.5, the speedy upgrade to its image-editing program; and SuperATM, which simulates document fonts if the user does not have them installed.

For low-end painting and drawing capabilities, look into Deneba Software's artWorks and Expert Software Inc.'s Expert Draw. Deneba also will show three ToolPAK add-ons for Canvas. And two old-time graphics programs — SuperPaint from Aldus and CA-Cricket Draw III from Computer Associates International Inc. — will show up in fresh versions.

Computer tots may like Davidson and Associates Inc.'s \$29 Kid

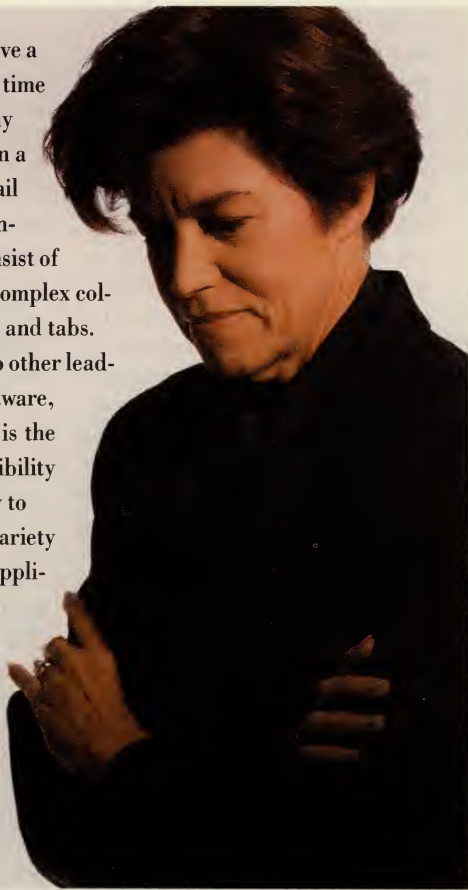
See Show picks, Page 12

Strategic Mapping's Local Expert can help PowerBook-wielding expo attendees find their way around downtown San Francisco.



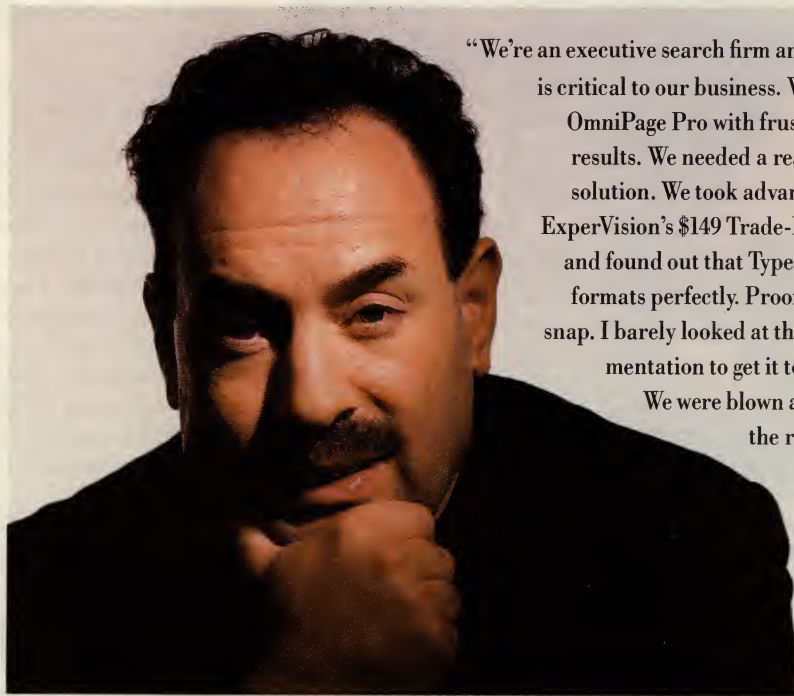
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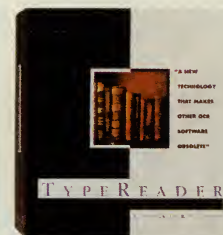
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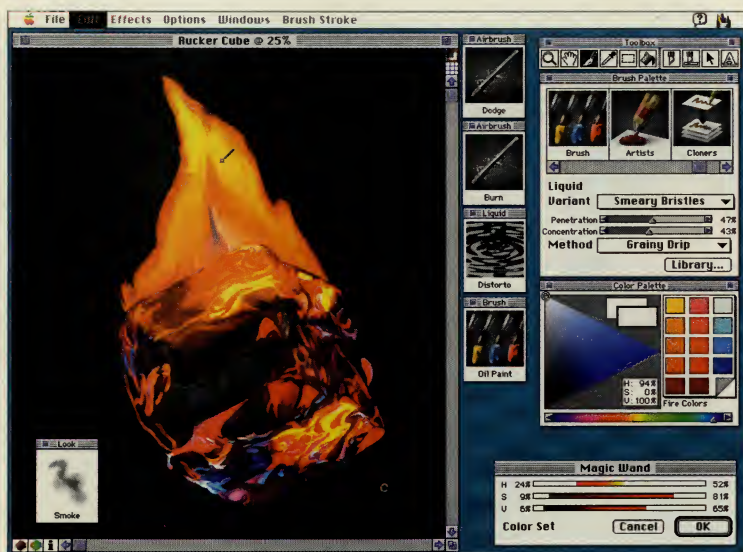
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EXPERVISION



Renoir and Warhol wannabes should check out the host of new tools in Painter 2.0, including a magic wand, liquid media and tear-off palettes.

Show picks

From Page 10

Pictures, which includes a slew of busy activities for children age 4 and older, including paint-by-number, connect-the-dots and mazes.

Font fans should check out Ares Software Corp.'s booth where the company will show FontMonger 1.5 and the new FontHopper and FontChameleon.

For multimedia software, stop by Passport Designs Inc.'s booth and

take a look at its Passport Producer presentation program. The Company of Science & Art will show After Effects, its new QuickTime special-effects software. And Macromedia Inc. will take the wraps off Authorware 2.0, its cross-platform multimedia authoring software, now with QuickTime capability.

Specular International will introduce Infini-D 2.5, an upgrade that adds Type 1 font support to the 3-D animation package.

utilities

Apple this week will announce the Macintosh Easy Open system extension (based on Translation Manager technology) and show it working with several third-party translation extensions from DataViz Inc. to seamlessly convert document formats.

At the Connectix Corp. booth, Virtual 3.0 and a new paper-tracking application called InfoLog will be on sale at discounted show prices. Meanwhile, Mainstay will finally ship MarcoPolo 2.0, turning it into a low-cost document-imaging solution.



Central Point Software will offer to keep Mac users Safe & Sound with its low-cost, entry-level "emergency disk" utility.

No Hands Software of Magnet fame will deliver Common Ground, a new print-to-disk utility. On the data-recovery front, Fifth Generation Systems Inc. hopes to electrify the crowds with its recently released Public Utilities, while Central Point Software Inc. will introduce Safe & Sound, a low-cost, "emergency disk" utility. Dantz Development Corp. will debut Retrospect 2.0, the long-awaited rewrite of its high-end backup tool. Now Software will unveil two brand-new programs: a package of desktop-beautification tools called Now Fun and an all-in-one compression package named — you guessed it — Now Compress. Insignia Solutions Inc. will again reorganize its SoftPC line, cutting prices, adding features and delivering a Windows-capable version.

e-mail

ShareVision Technology Inc.'s ShareView Plus, an integrated video telephony and collaboration system that works over standard phone lines, will be on display. Users of the system can dial up a co-worker and interactively work on

the same documents while making faces at each other.

Casady & Greene Inc. will show Snap Mail, a messaging system that provides AppleTalk Macs with electronic mail sans mail server and administrator. CE Software Inc. will demonstrate its new QuickMail 2.6, which boasts server and administration enhancements. And Macworld attendees will get their first peek at WordPerfect Office 4.0, an integrated set of workgroup technologies with beefed-up cross-platform scheduling and E-mail.

titles

Beatles buffs should look at A Hard Day's Night on CD-ROM at The Voyager Company booth. The company also will debut five new titles in its electronic-books collection, including Moby Dick, The Tao of Pooh and The Te of Piglet, and The Autobiography of Malcolm X.

For a break from high-end printers and networking applications, check out Who Killed Sam Rupert?, an interactive CD-ROM mystery from Creative Multimedia Corp. showing in the Educorp booth.



Virtual 3.0 set to outrun System 7 VM

InfoLog utility tracks hard-copy documents

By Henry Norr

San Mateo, Calif. — Connectix Corp. this week will release a long-awaited upgrade to the original Mac virtual-memory software, plus a new application designed to let users keep track of the location of hard-copy documents from their Macs.

Both Virtual 3.0 and the new program, InfoLog, will go on sale at sharp discounts at the company's booth at this week's Macworld Expo in San Francisco.

► **Virtual 3.0** offers several advantages over the virtual-memory routines built into System 7, according to the company. The program's patented swapping algorithms work much faster than Apple's, Connectix said, and an option called DiskSaver lets users reduce disk-space requirements to only the difference between physical RAM available and total memory desired; Apple's software requires disk space equivalent to total memory.

Because DiskSaver slows the operation of Virtual, Connectix recommends it for situations only where physical RAM is approximately equal to the memory requirements of open applications and minimal swapping is required. But even with the DiskSaver option enabled, Virtual 3.0 remains faster than Apple's virtual memory, according to Connectix.

The software runs on any Mac with a memory-management unit — including some 68020-based systems and all 68030 and 68040 Macs — but Connectix particularly is targeting users of PowerBooks, which often have more limited physical memory than desktop Macs. The program by default disables itself when users start up running on battery power, but it automatically reactivates itself when the notebook is restarted on AC power.

Connectix has reduced Virtual's list price to \$99, down from \$199, for the previous version. It will be on sale at the expo for \$49. Upgrades are \$19, including shipping and handling, and will be available at the show.

► **InfoLog** is a customizable database targeted at executives, lawyers, researchers and others who need to track large numbers of hard-copy documents.

Users will be able to create records with any number of keywords and other background information for each document, while the program generates a unique identifying number for the record and prints a sticker with the same number. Instead of trying to create

and maintain an elaborate filing system by subject, author or date, users can simply paste the sticker on the document and file it by code number, then search the database to find the code and thus the location when they wish to retrieve the item.

"It's like an On Location [from ON Technology Inc.] for your paper files," said beta-tester Kee Nethery, a Berkeley, Calif.-based networking consultant. "I scan a lot of magazines and rip out articles I think I might want to read someday. I used to try to organize them by topic, but I ended up with a cabinet filled with folders, and often when I

went looking for something I knew I had, I couldn't remember where I'd filed it."

With InfoLog, Nethery said, "I'm using less file space, and I can find what I need."

InfoLog lists for \$149 but will be available from Connectix at the expo for \$79. The initial release is for individual users, but a multi-user version incorporating a distributed database is due later this year, according to the company.

Connectix Corp. is at 2655 Campus Drive, San Mateo, Calif. Phone (415) 571-5100; fax (415) 571-5195. □

Safe & Sound helps novices through troubled waters

By Henry Norr

Beaverton, Ore. — Central Point Software Inc. this week will release a low-cost utility designed to give novice users an easy way out of jams that could otherwise cost them their data.

Called **Safe & Sound**, the \$49.95 program is intended for use as an emergency disk. The package will include two bootable floppies: an 800-Kbyte disk with System 6.0.8 and a 1.4-Mbyte disk with System 7.1 and all current system enablers.

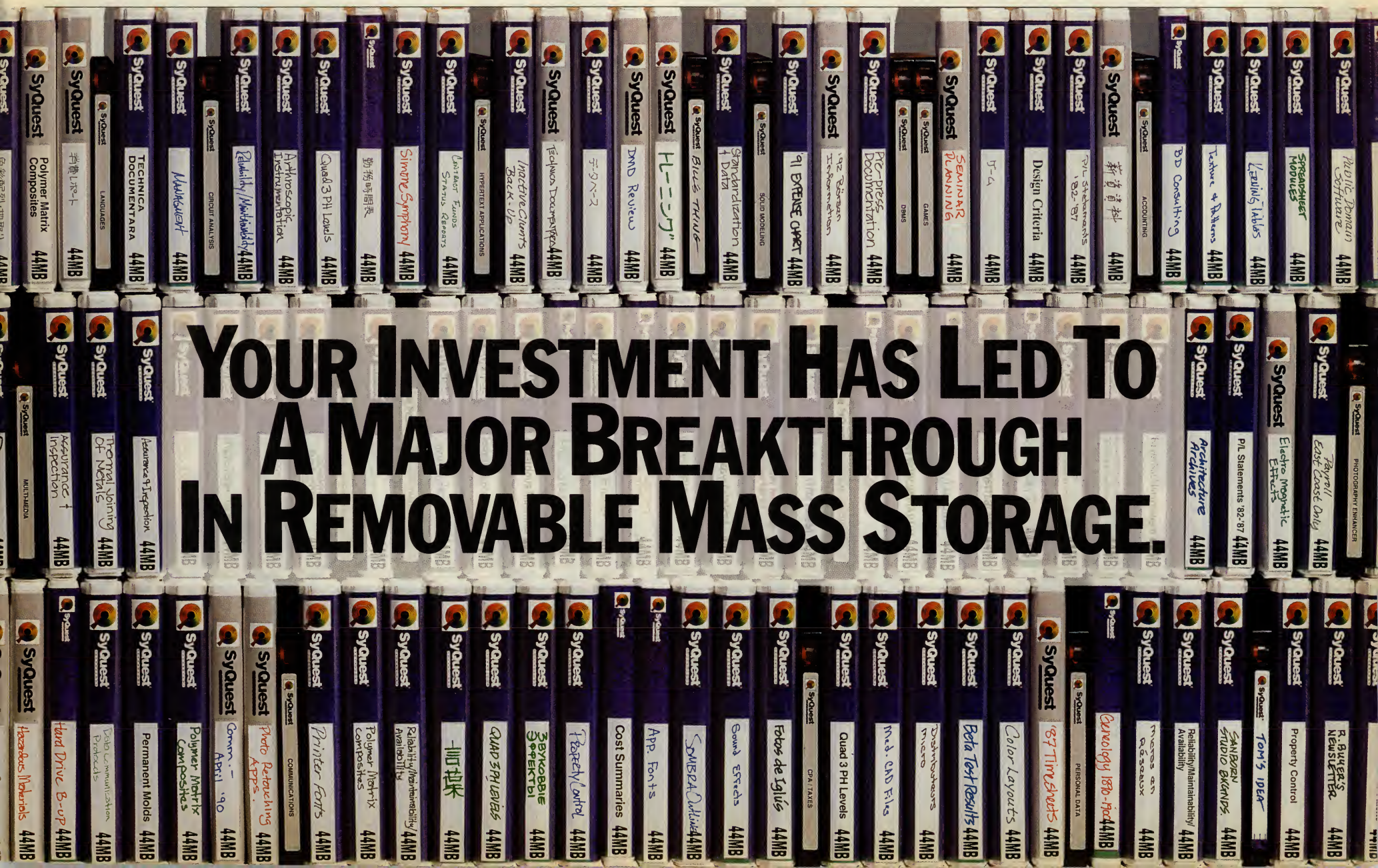
Each opens into the **Safe & Sound** application automatically, which immediately begins scanning all mounted disks for such problems as corrupted files, directory damage, virus infection or missing files and folders. Dialogs designed to be simple and unimposing report any problems found and ask permission to repair the damage.

The new program is based on DiskFix, the core application in Central Point's MacTools 2.0 col-

lection. It will provide all of DiskFix's repair capabilities and more, the company said, but confusing options have been removed and dialogs reworded. Central Point will distribute the program with displays aimed at mass-market outlets.

Central Point Software Inc. is at 15220 N.W. Greenbrier Parkway, No. 200, Beaverton, Ore. 97006. Phone (503) 690-8090 or (800) 825-2504; fax (503) 690-8083 or (800) 626-2778. □

**YOUR INVESTMENT HAS LED TO
A MAJOR BREAKTHROUGH
IN REMOVABLE MASS STORAGE.**



Local Expert is your guidebook to cities

By Raines Cohen

Santa Clara, Calif. — A personal-navigation application for Macs and PowerBooks is slated to hit the streets this week at Macworld Expo in San Francisco.

Strategic Mapping Inc. will release Local Expert, a map and database system designed as an electronic guidebook to unfamiliar cities.

Unlike printed city guides, the software helps users search for information and lets them update data on current local activities, such as sports and entertainment events.

The \$99 package includes a core set of regional maps for the world. The core maps, which are supplied by GeoSystems (see story, this page), document major U.S. and European highways.

Users can select from 100 City MapSets, which contain maps and as many as 140 categories of information about a particular urban area. The MapSets include information on events up to three months ahead and are updated monthly. One free MapSet order is included with the package; additional MapSets are \$25 each, and

users can order them directly from Strategic via mail or modem.

Within a city, the program can calculate distances, locate places by ZIP and area code, and import ZIP code data onto a map. Local Expert includes a list of recommended restaurants, shopping districts and recreational activities.

The program and maps are compressed to use just 500 Kbytes of RAM and 750 Kbytes of disk space for the core product, plus 500 Kbytes to 1 Mbyte of disk

space for each additional city.

A Windows version that uses the same interface and data files will be released later this month.

Future versions will include street-navigation information to help users find their way between locations. The current version includes only simple directions from nearby landmarks.

Strategic Mapping Inc. is at 3135 Kifer Road, Santa Clara, Calif. 95051. Phone (408) 970-9600; fax (408) 970-9999. □

GeoSystems to provide map data

When Strategic Mapping Inc. wanted to incorporate map data into Local Expert, it looked for an established map vendor. Last month Strategic turned to GeoSystems, a unit of map maker R.R. Donnelley & Sons Co. of Lancaster, Pa.

Strategic licensed detailed raster-based city maps used in the initial release of Local Expert, along with navigation technology

that will appear in a subsequent release later this year.

GeoSystems is aiming to become a major supplier of digital map information and systems for personal navigators. The company last year announced an agreement with Apple to supply content for Apple's Newton personal digital assistants (see MacWEEK, Nov. 16, 1992).

GeoPoint's BaseMap gives users more-flexible mapping method

Low-cost app 'dials around the planet'

By Raines Cohen

San Francisco — A new mapping application to be released at this week's Macworld Expo aims to help users create maps via a method more flexible than clip art yet less expensive than existing mapping applications.

BaseMap, a \$149 application from start-up GeoPoint Software Inc., lets users quickly generate land-form maps of any location at any size. Users can toggle between rapidly drawn low-resolution outlines and detailed outlines, including inland waterways and political boundaries.

BaseMap users zoom in on areas of a world map to create images for export or printing. The program displays land-boundary data supplied by the U.S. Geological Survey.

BaseMap can import city location


information from the Apple-supplied Map control panel, as well as other location data from user files. It can search for and highlight specific locations, and select by categories or distance.

Users can drag between points or enter exact locations to create distance contours showing radii from a location or paths showing the distance between points.

The company will sell add-on files with location data. A sample file of U.S. airports is included with BaseMap.

"You can kind of dial around the planet," said Dan Mapes, president of multimedia development company Reality Labs Inc. of Santa Cruz, Calif. Mapes said his company is considering development of CD-ROM titles based on a BaseMap interface. "You can go as deep as you want," he said.

GeoPoint Software Inc. is at 401 China Basin St., Suite 200, San Francisco, Calif. 94107. Phone (415) 957-1560; fax (415) 957-1644. □



**OUR NEW 88MB DRIVE
READS AND WRITES YOUR 44s.**

AE to show full deck of cards at expo

Accelerator cards, modem will debut

By Nathalie Welch and Raines Cohen

Dallas — Applied Engineering plans a flurry of activity at Macworld Expo this week. The company will show off several new accelerator cards, its recently shipped PowerBook modem, a cellular-phone adapter and a PowerBook display card.

► **Accelerators.** Applied will announce several new high-speed, low-cost CPU accelerator cards for a variety of Macs.

The processor direct slot cards, which will sell for as low as \$300, will include 20- to 33-MHz 68030 CPUs or 25-MHz 68040s.

The new cards initially will be offered for the Macintosh IIfx, IIfx and IIsi and later this quarter for compact Macs. They will be able to accommodate daughterboards that add large-screen 16-bit color, Ethernet connectivity or both.

► **Modem.** Applied Engineering

last month began shipping DataLink PB, the first PowerBook internal fax-data modem with two-way voice support. The \$619 internal V.32bis modem is capable of data transmission and supports send-and-receive fax at 14.4 Kbps.

The system can digitize incoming speech, allowing it to act as an answering machine, and play back prerecorded responses to selections callers make using a touch-tone phone. It also can act as a speakerphone, using the PowerBook's microphone and speaker.

The modem, which fits all PowerBooks except the Duos, supports Caller ID, where available, so it can customize voice, fax and data responses based on who is calling. It also can respond to user identification using touch-tone code entry.

The included FAXstf fax software from STF Technologies Inc. of Concordia, Mo., has an optional optical character recognition feature that enables users to translate fax messages into word processing files. Applied said the OCR option is expected to sell for about \$400.

The company in November shipped Axcell, a \$299 cellular-telephone interface that lets users connect the DataLink PB or other modem, fax or phone devices to several brands of mobile cellular phones through a standard phone cord. Users have to specify the brand of cellular phone they own when ordering Axcell.

Casady & Greene security package now System 7-aware

By Leonard Heymann

Salinas, Calif. — Casady & Greene Inc. last month shipped a long-awaited upgrade to Access Managed Environment, its multifunction security package. The program is now System 7.1-compatible and adds security to several aspects of System 7.

AME 2.1 is priced at \$279. Like previous versions, the package of interlocking extensions, a desk accessory and an administration application offers a variety of customizable access controls, configuration protection, data encryption and secure deletion, as well as virus protection

Axcell weighs 3.5 ounces with a 9-volt battery installed and includes standard and cellular phone cables. Axcell and DataLink PB will sell together for \$849.

► **Display adapter.** Applied last month became a distributor and co-marketer for the BookView Imperial video card and RAM adapter for PowerBooks.

The card, developed by Computer Care Inc. of Minneapolis, adds RAM and video-output functions to the PowerBook 140, 145

and 170. It includes 6 Mbytes of RAM and supports standard and full-page VGA, Apple monitors, NTSC and overhead projectors with eight-bit and gray-scale output.

The card carries a \$1,399 retail price, but Applied will sell it for \$1,116.

Applied Engineering is at 3210 Beltline Road, Dallas, Texas 75234. Phone (214) 241-6060 or (800) 554-6227; fax (214) 484-1365. □

and activity logging. New features include:

► **System protection.** Version 2.1 can prevent System folders under System 7 from being modified and make System folders under System 6 invisible.

► **SafeWord support.** AME 2.1 supports the SafeWord MultiSync card, an electronic password-generation device from Enigma Logic Inc. of Concord, Calif.

► **Password change.** A new option lets a remote administrator verify the identity of a user claiming to have forgotten a password

and then provide a new password.

► **Instant trash utility.** Protected items can be deleted by authorized users without having to remove AME's protection from the item.

Users updating to Version 2.1 must fully remove the previous version before updating. In addition, Version 2.1 users will have to remove the program before upgrading their system software.

Upgrades are \$49.95.

Casady & Greene Inc. is at 22734 Portola Drive, Salinas, Calif. 93908. Phone (408) 484-9228; fax (408) 484-9218. □



MACWORLD



"SyQuest Drives.

... SyQuest is clearly the best choice [for removable storage] for most users... Widely available from dealers and heavily used by service bureaus, SyQuest drives can be counted on for the long term and are reasonably priced. And with the new generation of SyQuest drives just announced, these strengths should only grow."

—Macworld, November 1992



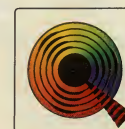
Over 4 million cartridges sold. Protecting your enormous investment in SyQuest cartridges was the inspiration for our new 88MB drive. It reads and writes to all your 44MB cartridges. So you can move to higher capacity and higher performance and still have complete access to all the hard work you've invested. It's one of a series of products resulting from our on-going development of the 5.25" form factor. With more to come.



Look for this logo when buying removable storage products.

SyQuest Technology, 47071 Bayside Parkway, Fremont, CA 94538 1-800-245-2278

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SyQuest
TECHNOLOGY

Removing The Limits Without Compromise.

Envivio stacking up storage modules

By Henry Norr

St. Paul, Minn. — Envivio Inc., a company previously known for its display products, will enter the storage market at this week's Macworld Expo in San Francisco with an innovative modular expansion system.

Called the Envivio SmartStack, the system is designed to allow users to pack multiple storage mechanisms into a single external box, without the clutter, expense and hassle that come with adding separate peripherals with their own cables, fans and power supplies.

Due later this month, the system consists of a base unit and top, sold together for \$249, and up to seven specially designed half-height or 1-inch-high drive modules. The base unit, called the SmartSource, includes a 120-watt power supply, two 50-pin SCSI connectors, a fan and a proprietary internal connector called the Pass-Through Bus (PTB); the top contains a second fan and a loop-back bus connector.

The storage modules, stacked between the base and top, have their own SCSI IDs but draw power from the base and need no separate cable because they transfer data to main connectors via the bus. Envivio initially will offer a \$699 module containing a 127-Mbyte Quantum ELS drive and a \$2,649 module with a 1-Gbyte drive from Hewlett-Packard Co.

In the future, the company said, it will offer a variety of other modules, including other hard



The SmartStack includes a single SCSI connector for multiple devices connected through an internal bus.

disk capacities, digital-audio-tape backup units, magneto-optical drives, and possibly modems and SCSI Ethernet connectors and display adapters. Envivio plans to release a developers kit other companies can use to build modules.

Mirror Technologies Inc. in November acquired Envivio, making it Mirror's high-end products division. While Mirror-labeled products are sold direct, Envivio-brand products will be distributed through dealer channels.

Envivio Inc. is at 2640 Patton Road, St. Paul, Minn. 55113. Phone (612) 628-6288; fax (612) 633-1083. □

Envivio RISC card could turn out to be all the RAGE at the expo

By Neil McManus

St. Paul, Minn. — Envivio Inc. at Macworld Expo this week will announce RAGE, a 24-bit-color video card that uses RISC technology to speed QuickDraw display and selected graphics applications. The company also recently shipped a flat-panel 24-bit-color LCD.

► **RAGE.** Due in February for \$1,995, RAGE is built around a 25-MHz LSI Logic RS-3000 RISC processor. It provides accelerated 24-bit color on displays as large as 21 inches.

Users with multisync monitors can switch on the fly among four screen resolutions: 640 by 480 pixels, 832 by 624 pixels, 1,024 by 768 pixels and 1,152 by 870 pixels.

RAGE supports GWorld (graphics world) memory and block-mode transfer. On-board SIMM sockets can accommodate up to 16 Mbytes of user-installed video RAM.

Envivio is developing add-ons, called Expert software modules, to let graphics applications tap the speed of the board's RISC processor. Initially, RAGE will ship with a module that accelerates Adobe Photoshop filters, including Sharpen, Sharpen More, Unsharp Mask, Blur and Blur More.

► **ColorFrame.** The company last month shipped ColorFrame, a flat-panel color display that works with both Macs and IBM PCs and compatibles.

Priced at \$5,495, ColorFrame uses a Sharp active-matrix LCD in a case measuring 9 by 12 by 2.5 inches. ColorFrame's 10.5-inch screen

refreshes fast enough to keep up with animations and QuickTime movies, Envivio said.

ColorFrame works with all color-capable Macs, including the PowerBook 180 and 160. Users of the PowerBook 140 or 170 will have to add a third-party video adapter.

Envivio Inc. is at 2640 Patton Road, St. Paul, Minn. 55113. Phone (612) 628-6288; fax (612) 633-1083. □

MacWEEK's top stories of '92 available on-line

San Francisco — A compilation of MacWEEK's top stories from 1992 is now available from ZiffNet/Mac, the on-line connection for MacWEEK readers. It includes the top 10 stories from each of last year's 44 issues.

Each issue is separated into its own text file, which can be opened in any word processor.

The compilation is in Library 3 (Special Reports) of the MacWEEK Forum (GO ZMC: MACWEEK). The file name is MW92.SEA. EasyView, a shareware text reader that organizes the information according to issue and story, can be downloaded out of Library 1 (Applications) of the ZiffNet/Mac Download & Support Forum (GO ZMC: DOWNTech). The file name is EASYVW.SEA.

ZiffNet/Mac is an on-line service hosted on CompuServe. □

Sony to display latest in monitors line

By Nathalie Welch

San Jose, Calif. — Sony Corp. of America will show off three new Multiscan Trinitron Monitors at Macworld Expo in San Francisco this week.

► **Sony CPD-1430**, due this week for \$1,029.95, is a 14-inch monitor offering a variety of resolutions up to 1,024 by 768 pixels at a 72-Hz refresh rate.

► **Sony CPD-1730**, a 17-inch display due in March for an undetermined price, also offers resolutions of up to 1,024 by 768 pixels with a 72-Hz refresh rate. This monitor supports nine factory-preset display modes and can store nine modes set by the user.

► **Sony GDM-2038**, a 20-inch monitor due in February for \$3,795, offers resolutions of up to 1,280 by 1,024 pixels and an 80-Hz refresh rate.

This monitor supports six user-set modes, three color temperature control settings and full edge-to-edge display in all modes.

All displays have both tilt-and-swivel bases and front control knobs for image adjustment, and conform to Swedish safety standards for

extremely low frequency and very low frequency emissions.

The monitors, which are compatible with a variety of third-party graphics cards, require a \$20 cable for attachment to the Mac.

Sony Corp. of America is at 655 River Oaks Parkway, San Jose, Calif. 95134-1997. Phone (408) 432-0190; fax (408) 432-7990. □



The Sony CPD-1430 Multiscan Trinitron Monitor offers users all-digital controls as well as high resolution.



Guess who didn't backup with DiskFit?

One day you're on top of the world. Humming as your fingers fly on the Mac. Life is great. Then... The Crash! Your hard drive keels over. Gets amnesia. Goes stupid. Is everything lost? Nope. You backed up your data with DiskFit. So life is still great. In no time you put your "lost" data where it used to be. And you're back in business.

Good thing DiskFit software is designed solely for the Mac. It's so smart. Friendly. Fast and efficient. Stores your precious data easily and quickly. You gasp. What if you didn't have DiskFit?

DiskFit Direct™
DiskFit Pro™

To go forward, you must back up





Claude Monet. *Cliff Walk at Pourville, 1882.*

The image is priceless.



Fortunately, the printer isn't.

The clear superiority of solid ink technology is becoming legend.

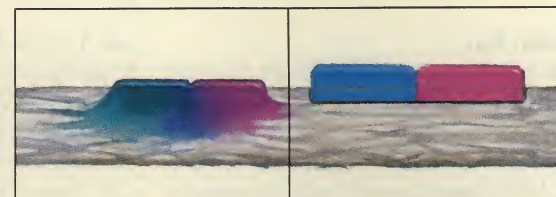
Vibrant, precision color is finally here, and with JOLT it's also finally affordable.

Perhaps more surprising is that the

image above is even better than this ad can show you, because this magazine uses a liquid ink which bleeds when it hits the paper. Solid ink holds its shape for noticeably better resolution.

Not only did Dataproducts pioneer

the development of solid ink technology, our JOLT is also \$3000 less than the only other color solid ink Adobe® PostScript® Level 2 printer on the market.

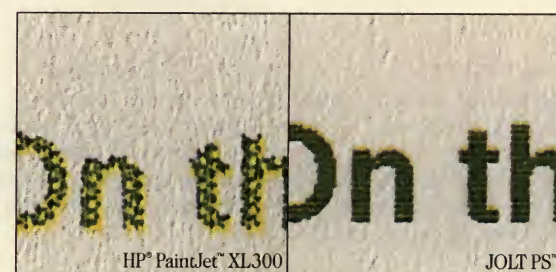


Liquid ink bleeds, often causing unintended and inaccurate color. Solid ink does not.

Even more impressive is JOLT's flexibility. Because of the non-dispersing nature of solid ink, it can not only print on plain paper, but on virtually any paper surface, giving you immense latitude when creating documents, presentations, publications and color comps.

And because of its solid ink technology, JOLT prints more readable text, even at extremely small point sizes.

Finally, JOLT is also more economical since it doesn't require any kind of special paper.



Unlike liquid ink printers, JOLT creates crisp characters in solid, bold color. (Enlarged 250%)

Imagine. Now you can produce 16.7 million different hues with the precision and vibrancy of solid ink, all at a remarkably low price.

So see your Dataproducts dealer today for a demonstration or call 1-800-334-3174 for more information.

Then stop by and check out JOLT, because when it comes to color printing, seeing is believing.

Dataproducts®

The high performance printer people.™

Group Hitachi Koki

Now to enter compression market

By Robert Hess

Portland, Ore. — Now Software Inc. has announced plans to join the ever-expanding file-compression market with Now Compress, which combines background, manual and archival compression in a single product. As in packages available from Fifth Genera-

tion Systems Inc., Aladdin Systems Inc. and Aylis Software Corp., users will be able to manage files manually via a Finder menu or have Now Compress operate automatically in the background.

A Now Compress extension provides a window, called the Inspector, that represents

archived files as folders. Opening an archive in the Inspector makes its contents available for Finder operations, including copying and opening files. Like other Finder windows, the Inspector is modeless, movable and can be sorted by a variety of criteria.

Files can be extracted from archives individually without expanding the archive's entire contents. Now Compress will work with its own files as well as StuffIt, Disk-Doubler and Compact Pro archives.

Now Software said it will make available a freely distributable decompressor so users without Now Compress can open its archives. The company is still finalizing the compression algorithms to be used in the product but said it expects the program to create smaller compressed files and work faster, especially at decompression, than any competing product.

Now Compress users will have extensive control over aspects of the product's operation. Users can choose to compress files either space efficiently (more compression) or time efficiently (less compression). RAM cache-sizing, menu command keys, idle-time compression and battery-based operation all are configurable.

Now Compress will ship in March for \$99; multi-user discounts will also be offered.

The company also announced Now Fun, a collection of extensions to customize the Mac. Now Fun includes rewrites of Screen Locker and DeskPicture, previously available as parts of Now Utilities. A cursor animator, sound manager and interface colorizer also are included. Now Fun will ship in March for \$79.

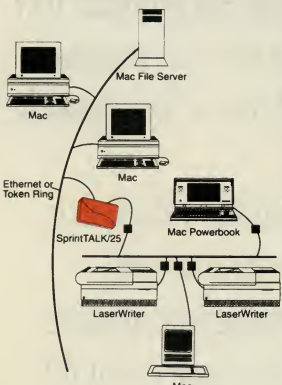
Now Software Inc. is at 319 S.W. Washington St., 11th Floor, Portland, Ore. 97204. Phone (503) 274-2800; fax (503) 274-0670. □

Give Mac users quick and easy access to any network printer...



...on Ethernet. Our new SprintTALK™/25E print server economically supports up to **eight** printers or other LocalTalk devices on popular 802.3 Ethernet networks. It features plug-and-play installation, requires no power-up sequences or software and comes standard with both 10BaseT and coax connectors. You can locate devices anywhere on the network and a convenient status light lets you troubleshoot at a glance.

...on Token Ring. Until now, it couldn't be done without routers, time and expertise. But our new SprintTALK™/25T print server makes LocalTalk to TokenTalk easy. It supports up to **eight** LocalTalk devices, including printers, Macs, Powerbooks and compatibles on any 802.5 Token Ring network. Just like our Ethernet version, it configures in seconds, works with all popular Mac applications and displays the selected printers in the familiar "Chooser" window.



SprintTALK/25 connects up to eight LocalTalk devices to high-speed corporate LANs.

...on Novell and Mac. SprintTALK™/200 print servers give Novell and Mac users simultaneous access to the same printers on both Ethernet or Token Ring networks. A built-in high-speed parallel port gives Mac and PC Windows users access to the latest high-speed printers and high-resolution LaserWriters. Even Powerbook users can directly connect to industry-standard corporate LANs.

	Model	Network Connections	Operating Systems	Ports	Printers	Memory	Price
SprintTALK/25	SPTLK25E	Ethernet 10BaseT and BNC ThruNet	AppleTalk	DINB LocalTalk	Up to 8 LocalTalk printers/devices	512Kb RAM 256Kb ROM	\$545
	SPTLK25T	4/16Mb Token Ring DB9 and RJ45	AppleTalk	DINB LocalTalk	Up to 8 LocalTalk printers/devices	512Kb RAM 256Kb ROM	\$1095
SprintTALK/200	SPTLK200E/AN	Ethernet 10BaseT and BNC ThruNet	AppleTalk/Novell	DINB LocalTalk, 1 parallel 1 Unipoint	Up to 8 LocalTalk printers/devices, 1 parallel PostScript, 1 parallel or serial PostScript	2Mb RAM, 512Kb Flash ROM	\$1295
	SPTLK200T/AN	4/16Mb Token Ring DB9 and RJ45	AppleTalk/Novell	DINB LocalTalk, 1 parallel 1 Unipoint	Up to 8 LocalTalk printers/devices, 1 parallel PostScript, 1 parallel or serial PostScript	2Mb RAM, 512Kb Flash ROM	\$1495

SprintTALK gives Mac users the ability to access all network printers.

SprintTALK. It's the LAN printing solution Mac users have been waiting for. For complete product details, worldwide distribution information and the reseller nearest you, call TOLL FREE. **1-800-243-2333**

SprintTALK™

What are you waiting for.



Digital Products, Inc.

the leader in networked printing and peripheral sharing

411 Waverley Oaks Road, Waltham, MA 02154
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SprintTALK and the Digital Products name and logo are trademarks of Digital Products, Inc. All other company names and logos are trademarks of their respective corporations.

Focus debuts low-cost, high-capacity drives

By Kirsten L. Parkinson

Woburn, Mass. — Focus Enhancements Inc. is pushing down the prices for high-capacity drives with its new line of XXL storage subsystems to be introduced at Macworld Expo in San Francisco this week.

The XXL drives, available now, come in three models: a \$1,199 560-Mbyte drive, a \$1,799 1-Gbyte drive and a \$2,749 2.1-Gbyte drive.

The costs of the drives, which the company sells direct to users, range from 41 percent to 55 percent less than the suggested retail price of competing products sold through dealer channels.

Both the 560-Mbyte and 1-Gbyte XXL drives are based on a 3.5-inch Micropolis mechanism. They have average seek times of 10 milliseconds and transfer rates up to 10 Mbytes per second on Macs that support Fast SCSI.

Focus' 2.1-Gbyte drive has an average seek time of less than 11.5 milliseconds and a maximum transfer rate of 10 Mbytes per second. It is based on a 5.25-inch Micropolis mechanism.

The drives are bundled with Virex, Citadel and Complete Undelete utilities from Data-Watch Corp. of Wilmington, Mass. (formerly from Microcom Inc.), and Disk Maker formatting software from Golden Triangle Computers Inc. of San Diego.

All the XXL drives come with a five-year warranty. Users can choose between black and platinum cases, and vertical and horizontal models.

The company this week also will announce sharp price cuts on its Ethernet adapter cards (see story, Page 44).

Focus Enhancements Inc. is at 800 W. Cummings Park, Suite 4500, Woburn, Mass. 01801. Phone (617) 938-8088; fax (617) 938-7741. □

WordPerfect releases the Works

By Lisa Picarille

Orem, Utah — WordPerfect Corp. this week will release a renamed version of BeagleWorks, the integrated package it acquired from Beagle Bros. Inc. two months ago.

Now called WordPerfect Works 1.2, the program offers integrated word processor, spreadsheet, charting, database, drawing, painting and communications modules. It is targeted at the education, small-business and home-user markets.

The \$249 application supports in-place editing, which switches tool palettes when users select different components of complex documents. For example, double-clicking on a graphical element brings up the package's paint tools.

WordPerfect has added an XTND translator licensed from Mastersoft Inc. of Scottsdale, Calif., that imports and exports WordPerfect 5.1 for the Mac and LetterPerfect 2.1 for the Mac files.

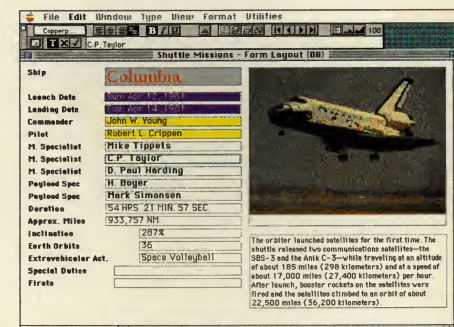
The company offers multi-user licenses for WordPerfect Works. Additional license pack-

ages without documentation sell for \$149 per user. Additional reference manuals cost \$29.95 each. Education users can purchase the program for \$99 per copy, and classroom workbooks are \$19.95 each. Upgrades are \$8 for users who bought BeagleWorks before Oct. 16, 1992, and free to those who bought it thereafter.

WordPerfect also is offering a trade-in that lets users of other integrated programs or Claris Corp.'s MacWrite II and T/Maker Co.'s WriteNow word processors purchase WordPerfect Works for \$99.

WordPerfect Corp. is at 1555 N. Technology Way, Orem, Utah 84057. Phone (801) 225-5000 or (800) 451-5151; fax (801) 228-5077. □

With WordPerfect Works' in-context editing, a tool palette changes to reflect the item being edited.



Component introduces FileFlex for databases

By Lisa Picarille

Princeton, N.J. — Component Software Industries Corp. last month shipped Hyperpress FileFlex, a \$195 relational-database external capable of creating, reading and writing the standard xBase files created by other databases.

Programmers can develop FileFlex applications using the scripting language of programs that support externals, including Software Ventures Corp.'s MicroPhone II, UserLand Software Inc.'s Frontier 2.0, Claris Corp.'s HyperCard, Aldus Corp.'s SuperCard, Spinnaker Software Corp.'s PLUS and Microsoft Corp.'s FoxBASE+/Mac.

A parallel version for Microsoft Windows works with applications that support Dynamic Link Libraries. FileFlex for the Mac shares a common interface with its Windows sibling but not the same native file format; a conversion application is included.

Component Software recently acquired the product from Graphic User Interfaces Inc. of Redwood City, Calif., which was formed by the product's original developer, HyperCard expert Dan Shafer, after his publishing arrangement with Scottsdale, Ariz.-based Symmetry Software Corp. collapsed.

Symmetry announced both the Mac and Windows products under the name Dashboard DB in 1991 but never shipped them. Likewise, GUI shipped only a few copies after renaming the product Hyperpress FileFlex.

Runtime versions are priced at \$300 for 10 copies, \$1,200 for 100 copies and \$3,750 for 1,000 copies. Members of Apple, Microsoft Corp., Aldus Corp. and Spinnaker developer programs, as well as universities, can purchase FileFlex for \$119 and runtime packages at significant discounts.

Component Software Industries Corp. is at 1377 U.S. Route 206, P.O. Box 201, Rocky Hill, N.J. 08553. Phone (609) 497-4501 or (800) 633-4252; fax (609) 497-4008. □



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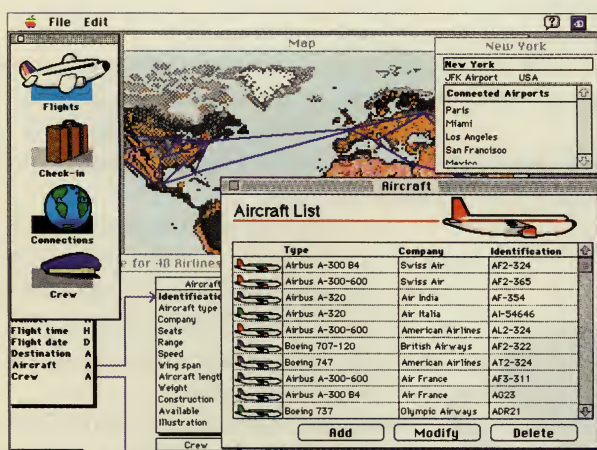
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Conventional desktop databases only let you do one thing at a time. But, you'd be more productive doing several tasks simultaneously. That's why we've built true multi-tasking into 4D Version 3.0.

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Creating a new process is as easy as clicking a check box. Each process can have its own window, menu bar, current selection, current records and variables, or can be completely transparent. Once you create a new process, you are free to do anything with that process: print a report, make a global change to records, search and display records, and more.

Windows that work for you.

4D 3.0 provides the easiest, most complete implementation of multiple windows for database applications. Thanks to 4D 3.0's multi-tasking system, each window is active, independent and automatically managed, and is controlled by a separate, independent process. One process can even "talk" to another. Using interprocess communication, actions in one window can update data in another automatically.

We've also added floating palettes, a new window type designed to always remain the topmost window in 4D. Floating palettes are simple to create and greatly expand your options for interface design.

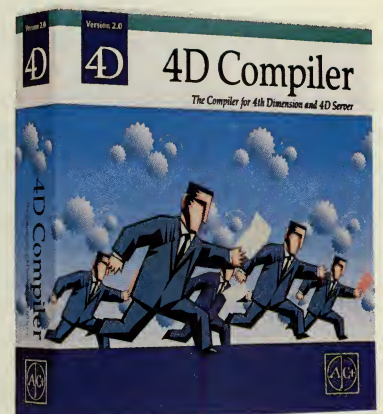
Faster database design.

Now it's even faster to get a layout to look just the way you want, or to test a procedure that you're working on. With 4D 3.0 the Design and User/Runtime environments run in separate windows and can be open simultaneously. So you can create

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4D 3.0 databases and applications are even made easier to create with the new 4D Compiler 2.0. It translates procedures into extremely fast machine code and provides invaluable error checking and debugging features.

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4D 3.0 is your path to 4D Server, our new multi-user solution. Any 4D 3.0 database can be used with 4D Server. You just double-click 4D Server and open the database. That's it! It's never been easier to move to a high-performance client/server architecture.

Get a head start developing multi-user applications. 4D multi-user applications require 4D Server. By using the 4D 3.0 manuals which contain details on how each feature will function under 4D Server, you're on your way to the multi-user environment of the future, today.

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to order your 4D 3.0 upgrade. Canadian customers, call 514-433-1000.

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(You must have your 4D serial number to order your 4D 3.0 upgrade.)

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4D Server is the first high-performance client/server database delivering the power of 4D 3.0 to everyone – available today.

4D Server is the revolutionary, new multi-user version of 4th Dimension. 4D Server's unique client/server architecture provides performance and features rarely found in PC databases. And because 4D Server is 4th Dimension, we've taken care to make the benefits of the new architecture available to everyone.

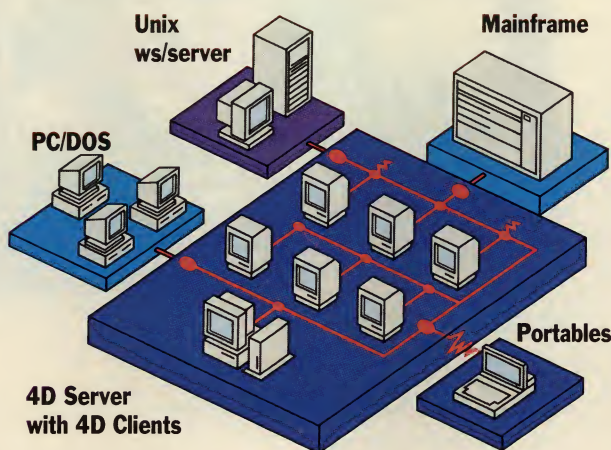
Sharing the Power of 4th Dimension.

4D Server introduces a new concept to the world of client/server architecture. Because of its personal computer origin, 4D Server more fully exploits the power of today's client workstations and provides the ideal balance between the host and workstation. 4D Server combines the performance of client/server architecture with the user rapport of the Macintosh.

4D Server is a completely integrated system in which the client software and the server application are actually the same product, 4th Dimension. No translation layer between host and workstation is needed since both sides are internally identical and communicate in the same language. Databases created with 4D 3.0 are 100% compatible with 4D Server. Now you can share all the user oriented aspects of 4D while enjoying the performance of client/server architecture.

4D Server runs on your network.

4D Server is a complete system including both server and client software. It's installed like any Mac application and makes use of your existing AppleTalk network. Simply open any 4D 3.0 database with 4D Server and enter it from any Mac on the network using 4D Client. No other software or network required.



4D Server bridges the gap between mini/mainframe systems and personal computers creating a multi-user, multi-vendor harmony of exceptional power.

4D Server and the world at large.

By using 4D connectivity tools, 4D Client may be connected simultaneously to 4D Server and other databases such as Oracle, Sybase, RDB, DB2 and even non-SQL databases. And because 4D Client is multi-tasking, you can perform operations on data from several different sources at the same time.

Streamlined Data Administration, too.

4D Server's easy-to-use graphical administration environment requires less time than file-servers. The main administration window provides the name of the database and data file currently in use; size of the server memory partition; cache status; number of connected users, processes and their status; and the current level of server activity. And since it utilizes a sophisticated automatic multi-tasking system, 4D Server is self-adjusting dynamically for optimum performance. With 4D Server you won't need a full time database administrator.

Multi-user, multi-developer.

4D Server isn't only a data server, it's a database object server, allowing multiple clients to simultaneously develop a database. Clients can safely use a database while others design it because 4D Server locks database objects such as layouts and procedures when they are being modified by a database designer.

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4D comes with a sophisticated security system. You can set up users and passwords, assign access privileges such as load, save, add and/or delete by user or groups of users. You can selectively control access to some or all of the database including its design.

Capture tomorrow, today.

Join us at MacWorld Expo January 6th through 9th, 1993 at booth #1915 in San Francisco's Moscone Center. You'll see 4D 3.0, 4D Compiler 2.0 and 4D Server demonstrated by database experts who understand the importance of powerful business solutions.

While you're there, be sure to enter our daily drawing for a free copy of 4D 3.0. MacWorld Expo is open Wed. thru Fri. 10-6pm and Sat. 10-4pm.



ACI US Inc. 10351 Bubb Road Cupertino, CA 95014 Tel. 1 408 252 4444.
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**Current multi-user 4D customers,
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for information about your upgrade to 4D Server.

Spark card ignites Quadra graphics

By Nathalie Welch

Glenview, Ill. — Spark International Inc. this week will ship a 24-bit-color graphics card for the Macintosh Quadras that it said works at the same rate as the Quadra's CPU.

The Video Torch connects via the processor direct slot rather than NuBus, so

it is not hindered by the need to push data through the 10-MHz NuBus bottleneck, according to Spark.

The \$1,595 accelerated video card can read graphics data with no wait states from the Quadras' 68040 CPU and write with just one wait state, allowing faster image processing

than possible with other cards, Spark said. Video Torch supports block transfers of images for an overall graphics acceleration of 400 percent to 700 percent.

Video Torch supports most displays at a 75-Hz refresh rate, including many from Apple, Hitachi America Ltd., Mitsubishi Electronics America Inc. and NEC Technologies Inc. The adapter provides 640-by-480-pixel resolution on 16-inch monitors, 1,024-by-768-pixel resolution on 19-inch monitors and 1,152-by-

870-pixel resolution on 21-inch monitors.

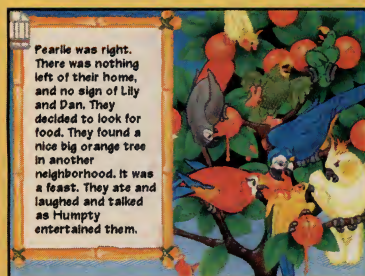
The Torch, which also supports monochrome and eight-bit color, features hardware pan and zoom and comes with 3 Mbytes of nonexpandable, on-board video RAM.

A NuBus version of the card for other Macs will be introduced early next year for about \$150 more than the Quadra PDS card.

Spark International Inc. is at 1989 Waukegan Road, Suite 107, Glenview, Ill. 60025. Phone (708) 998-6640; fax (708) 998-8840. □

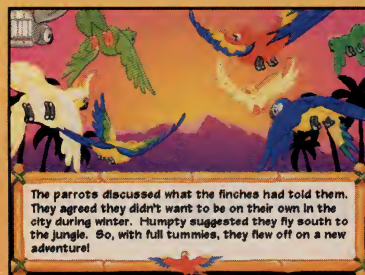
Shelley Duvall's It's A Bird's Life

A CD-ROM interactive children's story for the Apple Macintosh.



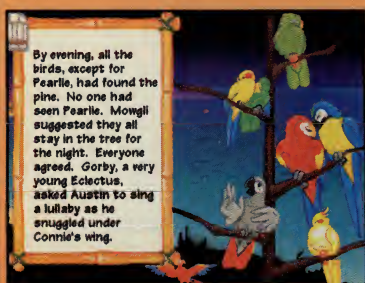
It's A Bird's Life is based on an enchanting original children's story, written by acclaimed actress/producer Shelley Duvall, and brought to life in interactive multimedia

by Sanctuary Woods Multimedia Corporation. Follow a group of loveable, zany parrots on an odyssey from LA to the Amazon forest and back again. Set out on your own adventure with Shelley and her pet parrot friends.



This interactive story features colorful original artwork by Andrew Pratt, original songs by Grammy-nominated Dan Gilroy,

and is narrated by Shelley Duvall. Children can listen to or read the story, animate screen objects with a click of the mouse, join in on singalongs, explore the facts, and play games scattered throughout the story.

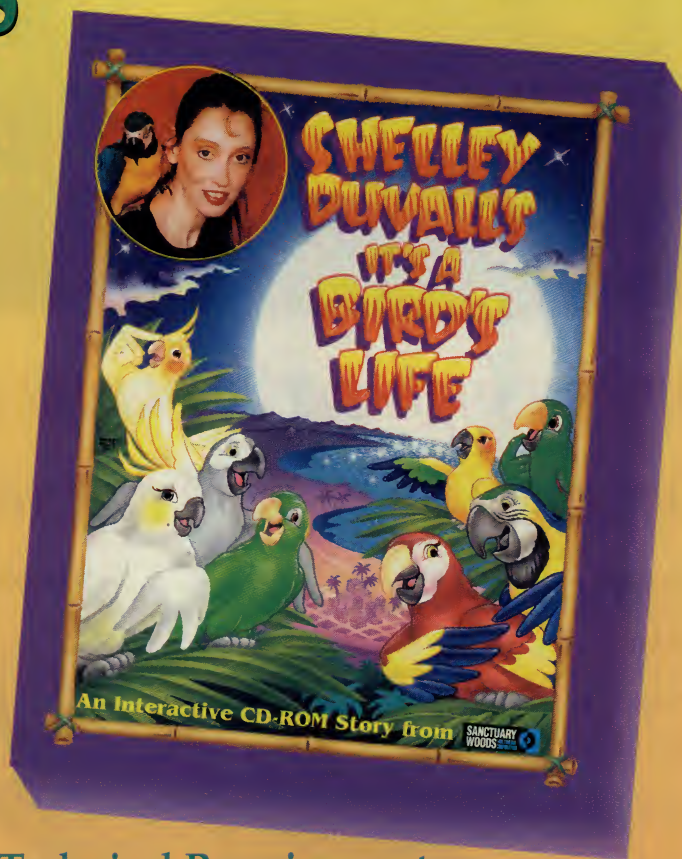


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EasyFlow shapes up charting for the Mac

By Lisa Picarille

Kingston, Ontario — HavenTree Software Ltd. has ported its popular DOS flowcharting program to the Macintosh.

EasyFlow for the Mac 1.1 lets users create and edit diagrams, organization charts and data flowcharts that can be shared with users who have the DOS version of the product.

Like its DOS counterpart, the \$339 program includes three libraries — Organizational, Dataflow and Flowcharting — with more than 30 symbols each to help users create diagrams quickly. HavenTree also offers 12 Alternate Shape Libraries for \$50 each. These libraries include symbols for specialized fields such as science, engineering and finance.

Drawing and charting features include an intelligent line-routing drawing engine, which rearranges the flowchart automatically when modifications are made. This lets users move, delete and copy blocks of text and objects without having to re-establish other relationships.

In addition, the program offers hierarchical charting, automatic text justification and support for color output. The size of EasyFlow charts is limited only by memory.

The Mac version adds a split-screen view not available in the DOS program. This lets users open multiple documents simultaneously and zoom in on portions of documents.

EasyFlow for DOS costs \$280. All versions come with a 30-day money-back guarantee.

HavenTree Software Ltd. is in Kingston, Ontario but can be reached at P.O. Box 470, Fineview, N.Y. 13640-0470. Phone (613) 544-6035 or (800) 267-0668; fax (613) 544-9632. □

Contact offers 'sidegrade'

Carrollton, Texas — Contact Software International Inc. this week will announce a promotion that makes ACT!, its \$395 contact-management application, available to users of competing products for \$99.

Users of any Mac application that stores and tracks calendar or contact information, including address books, contact managers and databases, will be eligible for the ACT! "sidegrade."

The \$395 ACT! provides a 73-field contact database, calendar functions and a full-featured word processor that can be accessed via the application's customizable tool bar (see MacWEEK, Sept. 28, 1992).

The offer will be available through March 31.

Contact Software International Inc. is at 1840 Hutton Drive, Suite 200, Carrollton, Texas 75006. Phone (214) 919-9500 or (800) 365-0606; fax (214) 919-9750. □

Plotter-emulation software updated

By Ian G. Jacobs

Cupertino, Calif. — Stevens Creek Software recently shipped an upgrade to PlotView, an application that emulates Hewlett-Packard Co. plotters.

The \$119.95 program reads HP-GL format files, which are commonly produced by scientific instruments such as infrared spectrometers and by a wide variety of scientific and CAD applications on non-Mac platforms. The software in effect plots the files to the Mac screen and allows users to save them in PICT format.

The new release, Version 3.3, now lets users print multiple files at once in a batch mode. Users also can now specify the creator of PICT files the program generates, so double-clicking the files opens a particular application.

Philip Williams, a scientist at the Lawrence Berkeley Laboratory in Berkeley, Calif., uses the program to convert spectra data for import into Claris Corp.'s MacDraw Pro. "Once [the data is] there, I pretty it up for sci-

entific presentation," Williams said.

The company also added new ungrouping features that let users customize plots in more detail than before, by separating out elements of a plot.

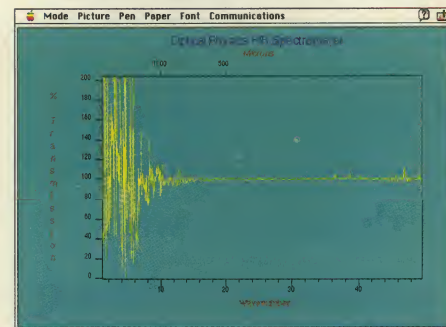
John Ralph, research chemist at the U.S. Department of Agriculture in Washington,

D.C., said he loves this new function. "It makes for absolutely fabulous editing," he said.

Current users can upgrade for \$20 to \$50, depending on the version they are currently using. Site licenses are available.

Stevens Creek Software is at 21346 Rumford Drive, Cupertino, Calif. 95014. Phone and fax (408) 725-0424. □

Stevens Creek's PlotView 3.3, emulating HP plotters, converts CAD drawings to Mac screen pictures.



ASK flat-panel display now available in U.S.

By Nathalie Welch

Rochester, N.Y. — The ASK Flat-Screen Monitor, one of the first LCD flat-panel displays to support 24-bit color at 640-by-480-pixel resolutions, is now available in the United States.

The \$5,995 backlit active-matrix thin-film transistor LCD, manufactured by ASK a/s of Norway and distributed through NovaCorp International Inc., displays up to 16.7 million colors with a refresh rate of 70 Hz.

The panel weighs just 4 pounds and is far smaller than conventional CRT-based displays, measuring 13 by 9 by 2 inches. It has an active area measuring 8.3 by 6.2 inches. The display can be mounted on either an included desktop stand or an optional ergonomic arm that lifts it above the desktop.

NovaCorp sells an optional \$599 video adapter that converts NTSC into analog RGB (red, green, blue) or VGA signals, allowing the panel to display videocassette recorder output. NovaCorp will ship next month a \$1,000 PAL (European) and SECAM (French) video adapter.

The ASK Flat-Screen Monitor conforms to Swedish safety standards for extremely low frequency and very low frequency emissions, according to the company. It has front-panel brightness and contrast controls.

ASK a/s has been producing LCD monitors and computer projection systems since 1983. The company recently introduced Impact 16.7, a 24-bit-color LCD projection display that works with overhead projectors. ASK is a subsidiary of Tandberg Data, a computer tape storage products maker also based in Norway.

NovaCorp International Inc. is at 2260 Lake Ave., Suite 330, Rochester, N.Y. 14612-5728. Phone (716) 647-6510; fax (716) 647-6512. □



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NEC expands its MultiSync line

*Switcher, converter polish
Mac-based presentations*

By Nathalie Welch

Wood Dale, Ill. — NEC Technologies Inc. last month expanded its line of graphics hardware for Mac-based presentations with two new MultiSync devices.

► **MultiSync Video/RGB Switcher**, priced at \$2,100, combines an RGB (red, green, blue) video switcher with a distribution amplifier so users can switch between multiple input and output devices during a presentation. Presentations can be controlled by the Mac through the serial port using software written by the user, with communication protocols and command codes provided by NEC, or by NEC's \$95 infrared remote control.

The 11-slot modular device can accommodate up to 10 different RGB and video input modules with one output module, or up to four RGB output modules with seven input modules.

Video input modules and RGB input modules sell for \$195 each, while VGA input mod-

ules and RGB output modules are \$325 each. A high-definition television module will be offered later this quarter for about \$2,000.

The MultiSync Video/RGB Switcher features front-panel controls for image adjustment and input selection. It supports up to 200-MHz bandwidth and can be daisy-chained with other switchers to support as many as 100 input devices.

► **MultiSync IDC-2000 Improved Definition Converter**, priced at \$3,795, enhances video presentations by eliminating many of the negative artifacts, such as line jitter, cross color, cross luminance and video noise, that occur when NTSC signals are magnified on large-screen projectors and monitors.

Compatible with all NTSC composite and S-video sources, the MultiSync IDC-2000 also has an RGB input for live camera or slide-to-video conversion devices.

Via front-panel controls, users can select input signals, split the screen between multiple inputs and make other image adjustments.

NEC Technologies Inc. is at 1255 Michael Drive, Wood Dale, Ill. 60191. Phone (708) 860-9500; fax (708) 860-5618. □

Virtual Gibbs helps visualize tool designs

By April Streeter

Moorpark, Calif. — Gibbs and Associates this month will ship a computer-aided manufacturing program that allows users to visualize tool designs before they are sent to cutting machines.

Virtual Gibbs, to be priced at \$5,000, lets users create tool paths and code files to drive CNC (computer numerical control) machines, which cut tools or dies from sheets of steel or other materials.

Virtual Gibbs incorporates three of the company's formerly separate CAM applications for object, tool-path and code-file creation.

The integrated program adds an on-line tutorial and a new graphical interface for easy creation of tool paths. Virtual Gibbs also has a 3-D modeling feature that simulates the process of cutting a part so designers can see trouble spots in a design.

"It's an excellent match with [Ashlar Inc.'s] Vellum," said Dave Erickson, tool designer at Four-Way Tool and Die Inc. of Troy, Mich. "In complicated designs where you've got a lot of pockets and holes, the



Virtual Gibbs puts a graphical interface on the tools needed to create files for driving large machinery used in cutting steel tools and dies.

ability to see a tool being cut before actually sending it to the machine eliminates a lot of screw-ups."

Virtual Gibbs can import AutoCAD's DXF (Drawing Interchange File) as well as IGES (Initial Graphic Exchange Specification) files.

Gibbs and Associates is at 5400 Tech Circle, Moorpark, Calif. 93021. Phone (805) 523-0004 or (800) 654-9399; fax (805) 523-0006. □

SalesMark upgrades Desktop Marketing

San Antonio — SalesMark Software Inc. has revamped its sales-management application.

Desktop Marketing 1.3, priced at \$595, can print form letters and create telemarketing queues up to 10 times faster than earlier versions, according to the company. The update features a new button bar that provides speedy access to the different modules of the program. Several of the program's windows have been

redesigned to take advantage of large screens.

The upgrade is \$59 until March 31 and \$99 thereafter, or free to users who purchased the program after Aug. 15, 1992. A demo version is available for \$20 plus shipping.

SalesMark Software Inc. is at 8269 Fredericksburg Road, San Antonio, Texas 78229. Phone (512) 614-0107 or (800) 622-4978; fax (512) 614-0639. □

Object Logo trimmed for student version

By Matthew Rothenberg

Cambridge, Mass. — A new version of Paradigm Software Inc.'s Object Logo promises to teach nascent developers a thing or two about object-oriented programming on the Mac.

Object Logo Student Edition, available now for \$49.95, is a scaled-down version of Object Logo 2.61, Paradigm's \$195 object-oriented Logo programming-language development environment (see MacWEEK, June 15, 1992).

The student edition can share programs with the full version, and it contains many features of Object Logo 2.61, including an incremental compiler, support for System 7 features and high-level access to the Macintosh Communications Toolbox. It lacks the full version's application generator, whole-program compiler, and MIDI (Musical Instrument Digital Interface) and Lego robotics modules, however. The robotics and MIDI modules sell separately for \$15 and \$10, respectively.

Object Logo Student Edition also includes "Logo for the Macintosh, An Introduction Through Object Logo," a textbook published by The MIT Press of Cambridge, Mass.

Student package purchasers can get a \$60 discount on the complete version of Object Logo.

Paradigm Software Inc. is at P.O. Box 2995, Cambridge, Mass. 02238. Phone (617) 576-7675; fax (617) 576-7680. □

SuperMOM line gets added mail power

By Lisa Picarille

Newton, Mass. — National Tele-Press recently upgraded its SuperMOM line of mail-order management products to Version 2.2.

The products do mail-list management, invoicing, order processing, inventory control, reporting and database analysis.

► **SuperMOM II**, priced at \$695, adds a telemarketing feature that lets users attach notes to customer addresses and create a tickler file that reminds them to follow up with clients. Other new features include support for an unlimited number of customers, royalties, commissions and automated back-order processing.

► **Multi-user SuperMOM II**, which supports up to five users for \$2,195, adds the same new features as the stand-alone version.

► **SuperMOM Home Business**, priced at \$295, is a start-up program for small businesses. It offers unlimited mail-list addresses and support for up to 1,000 customers.

► **UPS Module**, priced at \$200, was recently unbundled from SuperMOM II. It generates United Parcel Service-approved manifests and tracks UPS shipping costs.

Upgrades for each product are \$35. Users can move up to another product in the SuperMOM family for the difference in prices.

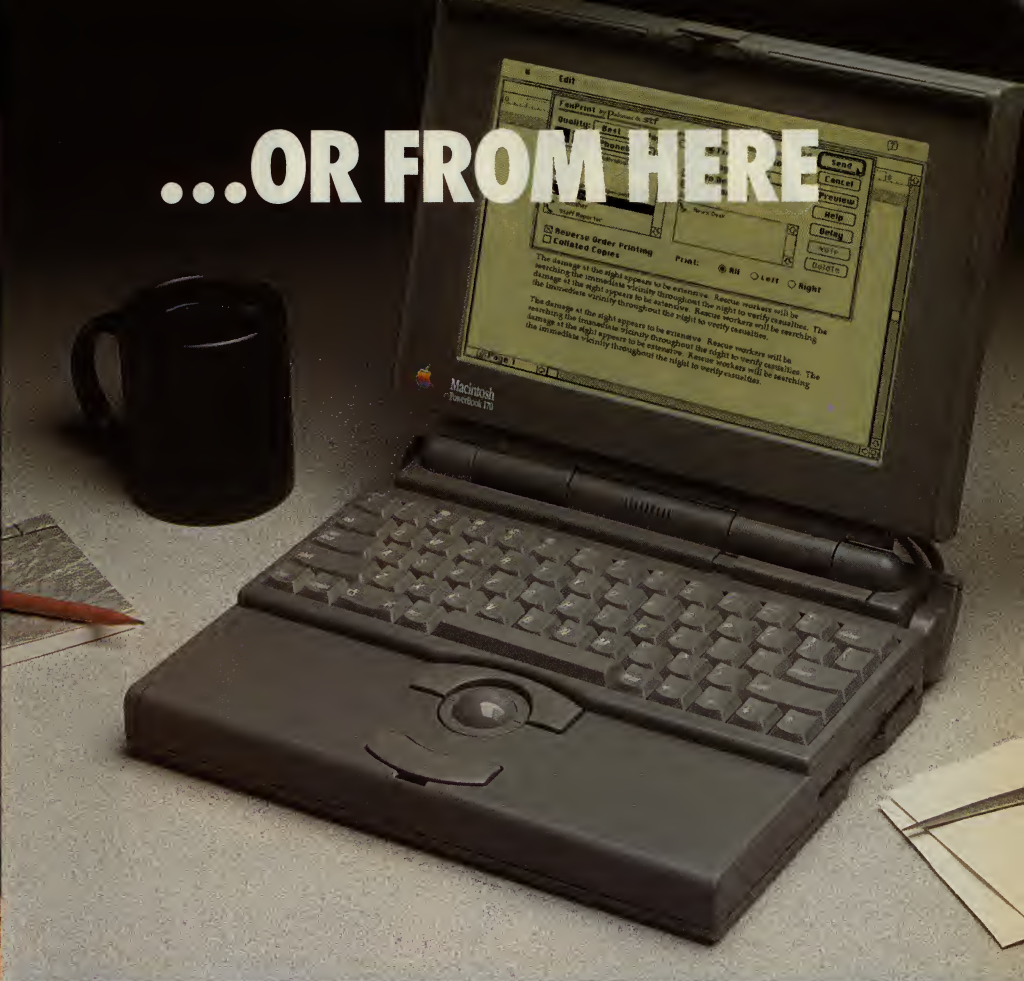
National Tele-Press is offering Mac user-group members a 10 percent discount on all SuperMOM products through June 1.

National Tele-Press is at P.O. Box 98, Newton, Mass. 02159. Phone (617) 332-5507 or (800) 448-0988. □

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News

MACWEEK 01.04.93

New line of MountainGate IncreMeg drives

MODEL	AVERAGE CAPACITY	MAXIMUM ACCESS TIME	TRANSFER RATE	PRICE
Internal				
IMEG-DS10-SCSI-100	130 Mbytes	15 milliseconds	7.5 Mbytes/sec	\$929
IMEG-DS10-SCSI-200	213 Mbytes	15 milliseconds	7.5 Mbytes/sec	\$1,209
IMEG-DS10-SCSI-300	340 Mbytes	15 milliseconds	6 Mbytes/sec	\$1,745
IMEG-DS10-SCSI-500	540 Mbytes	8.5 milliseconds	10 Mbytes/sec	\$2,269
IMEG-DS10-SCSI-1.2	1.24 Gbytes	8.5 milliseconds	10 Mbytes/sec	\$3,305
External				
IMEG-DS10-SCSI-100	130 Mbytes	15 milliseconds	7.5 Mbytes/sec	\$1,345
IMEG-DS10-SCSI-200	213 Mbytes	15 milliseconds	7.5 Mbytes/sec	\$1,625
IMEG-DS10-SCSI-500	540 Mbytes	8.5 milliseconds	10 Mbytes/sec	\$2,685

MountainGate readies removables

Some IncreMeg drives support Fast SCSI-2

By Kirsten L. Parkinson

Orange, Calif. — MountainGate Data Systems Inc. will unveil at Macworld Expo this week its new IncreMeg line of removable disk drives.

The IncreMeg drives, due to ship by the end of the first quarter, will be based on a 3.5-inch Maxtor mechanism. Capacities will range from 130 Mbytes to 1.2 Gbytes (see chart above).

The drive mechanisms can be fully removed from the chassis for security or portability. Some of the drives are available in internal configurations for the Mac Quadra 900 and 950 and the Mac IIfx.

The 540-Mbyte and 1.2-Gbyte models will support a Fast SCSI-2 burst transfer rate of 10 Mbytes per second. According to the company, the 130- and 213-Mbyte models are capable of sustained transfer rates of 7.5 Mbytes per second, and the 340-Mbyte model supports a transfer rate of 6 Mbytes per second.

The price of each drive will include one mechanism. Additional mechanisms will be \$735 to \$3,069, depending on the capacity.

All drives will come with a two-year warranty.

MountainGate also will announce other IncreMeg external models in 1-inch-high dual and 1.7-inch-high configurations. Pricing information on specific configurations is available from the company.

MountainGate Data Systems Inc. is at 1110 W. Taft Ave., Orange, Calif. 92613. Phone (714) 998-6900; fax (714) 637-4060. □

UMAX packs 3 apps with gray-scale scanner

New ScanOffice bundle priced at less than \$1,000

By Matthew Rothenberg

Santa Clara, Calif. — UMAX Technologies Inc. last month shipped a gray-scale scanner bundle designed to help Mac users acquire images for general office tasks.

ScanOffice for the Macintosh, priced at \$999, includes UMAX's new OA-1 flatbed scanner as well as third-party software packages for image capture, optical character recognition and desktop publishing.

The OA-1 captures eight-bit gray-scale images measuring up to 8.5 by 14 inches at 600 by 300 dpi, or 1,200 by 1,200 dpi via software interpolation. It can capture a 600-dpi, letter-size image in 26.4 seconds, UMAX said.

The OA-1 supersedes the company's \$1,295 UG630 scanner; according to UMAX, the main difference between the scanners is the second SCSI port found in the new model.

UMAX said it plans to offer a hardware and

firmware upgrade that will turn the OA-1 into a three-pass color scanner. The upgrade is slated for the fourth quarter; pricing has not been set.

Bundled software includes:

► **Ofoto**, the gray-scale scan-optimization package from Light Source Inc. of Greenbrae, Calif. Light Source will release a \$395 color version of the software at this week's Macworld Expo and cut the gray-scale price to \$195 (see MacWEEK, Dec. 7, 1992). Owners of the bundle will be able to upgrade to Ofoto 2.0 for \$95.

► **TypeReader**, the \$695 OCR program from ExperVision Inc. of San Jose, Calif. (While supplies last, ExperVision continues to offer TypeReader with Abaton's 300-dpi TranScribe 300 scanner for the same price.)

► **Publish It! Easy 3.0**, the latest version of the low-end desktop publishing program from Timeworks Inc. of Northbrook, Ill. The software retails for \$199.

UMAX Technologies Inc. is at 3170 Coronado Drive, Santa Clara, Calif. 95054. Phone (408) 982-0771 or (800) 562-0311; fax (408) 982-0776. □

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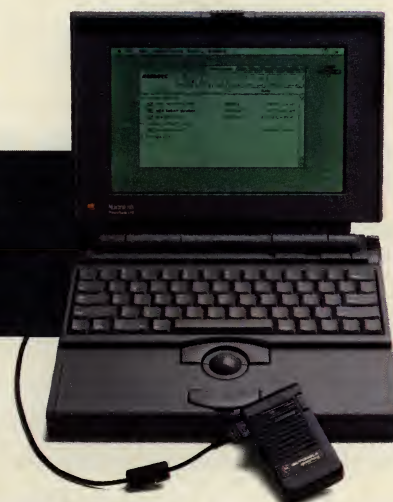
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1992 brought more mobility, lower prices;

1992 WAS A YEAR of extraordinary growth and innovation for Apple, but not for its institutional customers.

The company became, by its own account, "the worldwide leader in unit shipments of microcomputers." By driving Mac prices down toward IBM PC-clone levels and by moving aggressively into consumer-distribution channels, it extended its already strong positions in the home, school and small-business markets. The enthusiastic response its notebooks generated when they first appeared 15 months ago proved to be anything but a flash in the pan: Strong demand for higher-end models, stoked by the release of the 145 in August and the 160, 180 and Duos in October, lifted Apple into the first rank among U.S. manufacturers of portable computers.

Last year also saw Apple make modest forays into several new markets — with Mac utilities and Windows printers and software, for example — and gear up to enter several more this year with color-imaging peripherals, enterprise-grade servers and, most strikingly, handheld personal digital assistants. The company also laid the groundwork for bringing the 68040 down into the Mac mainstream to compete with 486-based systems, while behind the scenes intensive work continued on future PowerPC-based systems.

On the software front Apple finally delivered a Mac system that won't require constant reworking for fast-growing Asian markets. It continued to polish up innovative extensions such as QuickTime, OCE (Open Collaboration Environment), QuickDraw GX and AppleScript. Although only QuickTime reached users, the company offered tantalizing previews of the others in an effort to bolster the Mac's position against an ever-improving Windows.

Yet all this, with the exception of the PowerBook revolution, had little effect on the day-to-day reality of Mac computing in 1992.

Aside from the PowerBook Duos, the new Mac models that shipped last year were strictly evolutionary advances over their predecessors. System 7 appeared on more desktops than ever — more than half the installed base, according to Apple — but brought only modest changes in the way most people work, since few users have yet found ways to take advantage of the system's most advanced features.

Likewise, in the Mac applications market, the year was one of relative quiescence, with mostly modest upgrades (although the recent release of 4th Dimension 3.0 and 4D Server could go down as the breakthrough that brought the Mac into the database big leagues). Even the ever-active utility arena took on a me-too character, with the appearance of more and more synchronization tools, disk formatters and compression packages.

Indeed, by year-end, the changes foremost on the minds of Mac managers brought more chagrin than satisfaction. Despite Apple's efforts to broaden its channels, purchasing new Mac hardware became a game of chance, as burgeoning demand overwhelmed the company's manufacturing capabilities. And the first effect of Apple's efforts to make its software-development programs self-supporting was a sometimes sharp increase in the cost of keeping user systems and networks up to date. — By Henry Norr, editor



ILLUSTRATIONS BY SCOTT CAMPBELL

New CPUs due at faster tempo

Look back. Mac managers could consider 1992 the year Apple beta tested its faster-to-market Mac strategy, with limited success.

For the first time, Apple introduced CPUs four times in one year. Admittedly, the Quadra 950, which hit the streets last May, and the August unveiling of the Power-

Book 145 qualified more as "midlife kickers" for the 900 and 140. But immediately after the 145 introduction, Apple rolled out a whole new Mac line sold through new channels.

In terms of technology, the Performas were more style than substance. The 200 and 400 were identical to the Classic II and LC II, distinguished only by bundled software, sales channel and marketing. The 600 was the only new Mac in the bunch: a midrange 68030 design with an optional, popular internal CD-ROM drive.

And then in October, Apple let loose with the Performa 600's bigger and smaller siblings, the IIVx and IIVi. These models were distinguished from their consumer cousin by speed. And the IIVi was the first Apple CPU to sell in Europe and nowhere else.

But October's desktop Macs were overshadowed by Act II in the PowerBook saga.

In addition to tweaking the standard PowerBook line with incremental improvements, such as color video-out and 16-gray-scale screens, Apple also shipped its dockable PowerBooks. The tiny Duos made no secret of their intended target: A

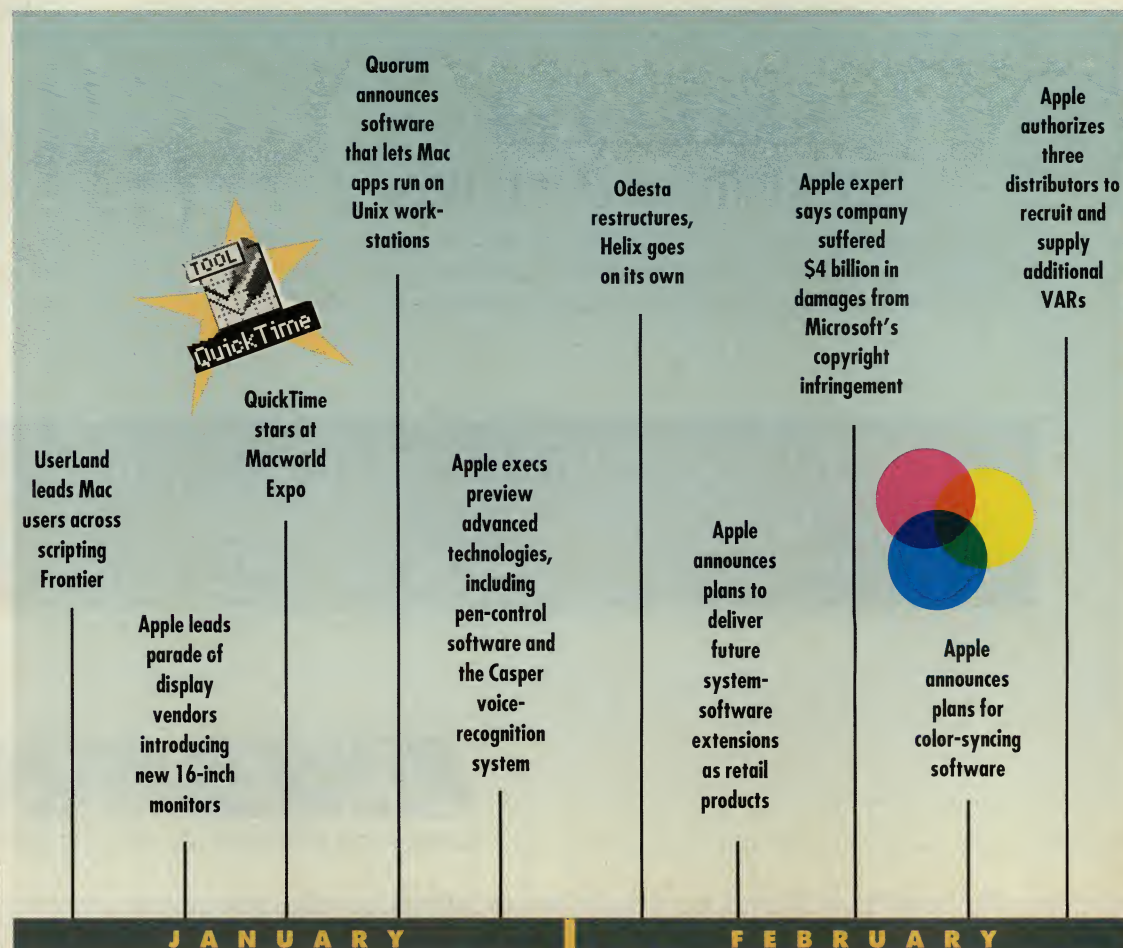
Duo and a Duo Dock make for a reasonably priced alternative to a desktop '030 Mac.

But while this flurry of new-model activity generated a lot of interest, the unprecedented success of the entire product line, especially the mobile Macintoshes, caught Apple by surprise. Filling demand became Apple's biggest challenge. For the first time the company had problems filling even low-volume orders, notably the high-end Quadra 950.

Look forward. The way things look, Apple's supply problems will continue in 1993.

On Feb. 10, Apple is expected to introduce a slew of desktop CPUs, including a family of low-cost and midrange 68040 systems. These computers will include the "pizza-box" Centris 610 with a 20-MHz 68LC040, which has no integrated FPU (floating-point unit), and an optional CD-ROM drive — an option you'll find in almost all desktop Macs from now on.

The Centris 650 will come in the same case as the IIVx and will use a 25-MHz version of the same 'LC040. And a new "minitower" will have an FPU-equipped 33-MHz '040.



extensions, PDAs and PowerPC top '93 agenda

A faster LC — likely to be called the LC III — and a “color Classic,” a compact '030-based system with a color display built in, are due early in the year. Also in the pipeline for the first half of '93 are more PowerBooks, including color models and possibly another round of Performas, such as a Performa 200 that has System 7 and applications in ROM.

Keeping up with demand for new Macs should set Apple's delivery schedules back even further. But perhaps by late spring, when an '040 Mac with hardware support for digital video debuts, the company will have caught up with demand from this February's Macs.

All in all, we expect Apple to introduce well over a dozen new CPUs in the first half of this year. What's driving this frenetic activity? Competition from inexpensive 486-based IBM PC-compatible clones and the expected debut of Windows NT are factors.

But even more critical than fighting off the clones, Apple must keep cranking up the volume on new CPUs to keep customers interested in the Macintosh product line — at least until it ships the PowerPC Macs sometime in early 1994. — *By Andrew Gore, senior news editor*



System matures — adoption slow

Look back. With System 7.1, which shipped in October, Apple inaugurated a new approach to operating system upgrades, adding features and CPU compatibility via modules and extensions.

System 7.1 was the first “world-ready” system with hooks for WorldScript fonts and language

modules that should enable quick release of foreign-language system software and applications that support two-byte characters.

The new modular system architecture has drawn some fire from network administrators, who worry that it complicates their management of multiple users, each of whom runs a slightly different version of the operating system.

Users have criticized another 7.1 “feature”: Apple no longer licenses on-line services and user groups to distribute system software, leaving users with no choice but to purchase system updates through retail channels or from Apple directly.

Much of the Macintosh community seems reluctant to accept System 7: According to Apple, more than 50 percent of all Mac users run System 7; many of them, however, purchased CPUs that come with the operating system installed.

Presumably, a large portion of the unconverted have older Macs that they cannot, or do not want to, support System 7's memory and performance requirements.

On the applications side, although scores of programs support basic System 7 features, such as 32-bit addressing and required

Apple events, the number supporting more-sophisticated features, such as publish and subscribe and extended suites of Apple events, remains in the dozens.

Look forward. In the near term, Apple has promised a lineup of system extensions for the first half of 1993. These include QuickDraw GX, which will lay an object-based graphics foundation and will include ColorSync, which will enable device-independent color; AppleScript, scripting software that will let users automate and customize applications; and OCE (Open Collaboration Environment), which will make messaging as easy as dragging and dropping files on the desktop.

The second half of the year will bring some even snazzier enhancements to the Mac system. Apple's announced but as-yet-not-shipped Macintosh pen extension should be making notes sometime this year, and Casper, the much-

demoed voice recognition add-on, will be turning an attentive ear toward Macintosh users by year-end as well.

Beyond next year's round of extensions, Apple is offering multiple development paths for the long term.

Two projects undertaken by Apple and IBM Corp. may signal the OS future. PowerOpen, a refurbished Unix, is due in mid-1993 from Apple and IBM, while the Taligent OS, Taligent Inc.'s object-oriented operating system, will come in 1994 or 1995.

1994 also should see Apple's introduction of an industrial-strength microkernel (“a very small OS within an OS”) fitted for System 7. The microkernel, which will run on 680x0 Macs as well as RISC-based models, will add Unix-grade capabilities, such as multithreading, memory protection, pre-emptive scheduling and demand-paged virtual memory. — *By Carolyn Said, senior news editor*

According to Apple, more than 50 percent of all Mac users run System 7, but many purchased CPUs with the OS installed.



What's in, what's not

What's In . . .

1993 as The Year of CD-ROM

Rumors of an impending merger/buyout of Symantec Corp.

Mass merchants, mail-order sales

Right-sizing

Low Mac hardware prices

Portable Macs

Introducing better and cheaper computers faster

Client-client-server

VITAL

Multimedia titles

Apple building its own version of third-party software and hardware products

Retail Apple software

Apple's best buddy IBM

Newton

What's Out . . .

1992, 1991, 1990, 1989, 1988 as The Year of CD-ROM

Rumors of an impending merger/buyout of Adobe Systems Inc.

Apple's traditional dealers (much to their dismay)

Downsizing

Low Mac system-software prices

Portable Mac inventories

Shipping better and cheaper computers faster

Client-server

VIM

Multimedia tools

Third parties

Free Apple software

Apple's best buddy Microsoft

Vaporware (or is it?)



ARA mobile in '92, PDAs in '93

Look back. In 1992 Apple's PowerBooks set the stage for the new era of mobile Macintosh computing. The enormously successful products gained an impressive market share in a short time and spawned a number of hardware and software mobile accessories.

For many users, computing became ubiquitous — no longer just something for the office. This helped change people's work habits, creating a pressing need for network access on the road.

That's where AppleTalk Remote Access (ARA) came in. Although the dial-back security in

ARA provided good access controls for users who tended to call in from one location, it lacked security support for users who call from hotels or other switchboard-controlled locations. For the time being, many managers have left some ARA accounts unprotected to assure wanderers access to the network.

The high cost per line of Mac-based ARA servers was the greatest barrier to the system's acceptance in 1992. Even though PowerBooks came bundled with the client software for most of the year, the requirement that a Mac be dedicated to the support of a single ARA line made the investment in multipoint systems costly.

Cayman Systems Inc.'s GatorLink and Shiva Corp.'s LanRover products shattered that price barrier, but they still cost more than \$900 per port when the cost of a high-speed modem is factored in.

Security Dynamics Inc.'s ACE Server and SecurID card, which can be used with both Shiva's and Cayman's servers, defined the high end of dial-up security. The server and card work in tandem to change a user's password once each minute. However, the product requires that the network include a Unix workstation.

Look forward. PowerBooks will continue to evolve throughout 1993, getting lighter, faster, more colorful, more powerful and more user-configurable. Once Apple catches up with its enormous backlogs of the models it introduced in

the fall, we'll find out how users voted with their pocketbooks on the docking concept introduced with the Duos.

With the emergence of a new class of information tool, the personal digital assistant (PDA), the demands for better mobility support are sure to grow in 1993.

Apple is expected to announce its own multipoint ARA server, which adds firmware support for SecurID. Although adoption of ARA slowed when it was unbundled from PowerBooks at the end of the year, it should get back up to speed at large sites once Apple sets a site-licensing policy.

During the next year, the ARA server price per port should fall to as low as \$200 as developers bring new multiprotocol, multipoint ARA servers to market. The devices, due from Cisco Systems Inc., Xylogics Inc. and Centrum Communications Inc., will support ARA over Point-to-Point Protocol and Serial Line Internet Protocol telephone connections.

Low-cost access should result in synergy with the PDAs that will appear in 1993. A Newton costing less than \$1,000 with a modem will be able to log onto an AppleTalk network and access electronic mail and file-sharing capabilities.

That kind of convenience, at such a low price, may be the catalyst for a massive migration off the desktop. Only time and the usefulness of PDAs will tell. — *By Mitch Ratcliffe, editor at large, and Raines Cohen, technical analyst*





Business apps stay on course

Look back. As Mac developers concentrated on getting their Windows products out the door, 1992 proved to be an unusually uneventful year for Mac productivity software.

There were major Mac upgrades — including Microsoft Excel 4.0, Word 5.0/5.1, Project 3.0 and PowerPoint 3.0; T/Maker Co.'s WriteNow 3.0; ACI US Inc.'s 4th Dimension 3.0; and Claris Corp.'s FileMaker Pro 2.0 and MacProject Pro — that were announced, shipped, and met with positive receptions. But in general, spreadsheets, word processing, project management, stand-alone databases and presentation graphics all stayed on

their evolutionary path without offering any major leaps.

Last year also found a small crop of Macintosh interim releases, including Lotus 1-2-3 1.1, WordPerfect 2.1, Claris Resolve 1.1 and Aldus Persuasion 2.1.

"There is a genuine absence of innovative [Mac] products," said Jeffrey Tarter, editor of the Soft•letter, an industry newsletter based in Watertown, Mass. "I'm hard pressed to think of a single developer that targeted the Mac for an important innovative application, and that's unusual. It used to be that innovative applications came out first on the Mac and then moved to other platforms. Now it is the other way around."

Even hard-core Mac developers put considerable resources into delivering Windows versions of their products, notably Claris' FileMaker Pro and ClarisWorks. For its effort, Claris emerged as one of the few providers of cross-platform databases for Macintosh and Windows environments. Although this feat was hailed by many, Claris' Windows efforts left the Mac community with only two major Mac upgrades from Apple's own subsidiary in 1992.

Look forward. The bulk of applications released last year retained the everything-but-the-kitchen-sink attitude of the '80s. That type of "features checklist" mentality lingers on as the new year begins. Promises of modularity and plug-in features have given way to realistic evaluations of the under-

pinnings necessary to tie applications together. Microsoft Corp.'s OLE (Object Linking and Embedding), as well as Apple events, remain relatively immature foundations on which users can link data from different applications.

The good news, however, is those data-sharing technologies are expected to continue to evolve throughout the year and may become ubiquitous in late 1993. But it is unclear whether users will buy into the modular software approach and purchase many packages to do work now performed by one or two.

In '93 a handful of PC heavyweights, such as Lotus Development Corp. and Borland International Inc., will be more active in the Mac market.

Lotus, which has yet to translate its DOS spreadsheet success to the Mac, is expected to deliver Macintosh versions of Notes and Ami Pro. And Borland is readying a Mac version of its Quattro Pro spreadsheet.

Users can expect more financial-analysis tools that work in conjunction with spreadsheets. Following the example of SpreadBase from Objective Software Inc., which shipped at the end of 1992, users also can expect major players such as Microsoft to bring financial-analysis tools — which meld spreadsheet and database technology — into Excel.

And FileMaker Pro, the best-selling Mac flat-file database, also may get some competition if Symantec Corp. ever delivers its long-overdue Mac version of Q&A. — *By Lisa Picarille, senior writer*



More pieces fit into connectivity

Look back. For Macs, 1992 was the year of the networking elbow joint, a year that was dominated by small products that fit into the corners of your networks.

Printer converters, multiport transceivers, terminal emulators, and Ethernet-to-WAN routers came out with drumbeat regularity. At the same time, Apple, Lotus Development Corp. and Novell Inc. sang arias to groundbreaking products that didn't ship. Fax modems burst out across a range of sizes, shapes and — after Apple announced its Express line in October — prices. Fiber Distributed Data Interface (FDDI) NuBus cards appeared, as did a standard for running FDDI protocols over copper wiring. Wireless products remained exotic, but pagers got hot as low-tech extensions to LANs. And the industry wrangled with the government over access to secure digital pathways.

Look forward. This year Apple will tempt corporations with OCE (Open Collaboration Environment), which promises to simplify the complex data flow users cope with in their

daily work. If successful, OCE will be the Mac networking story of the year.

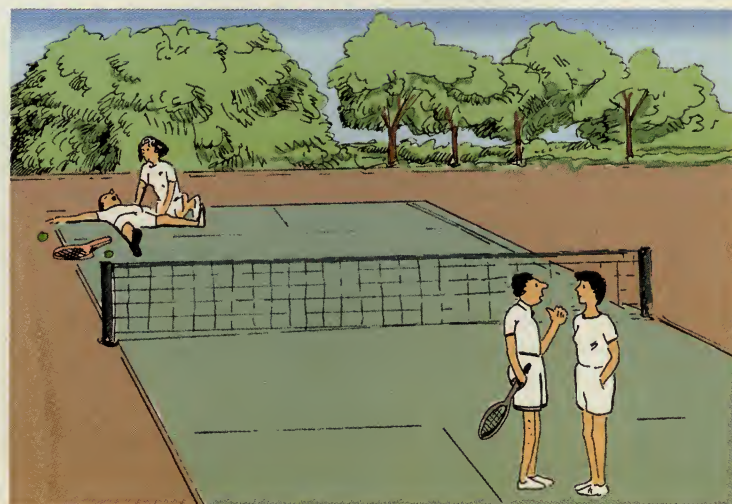
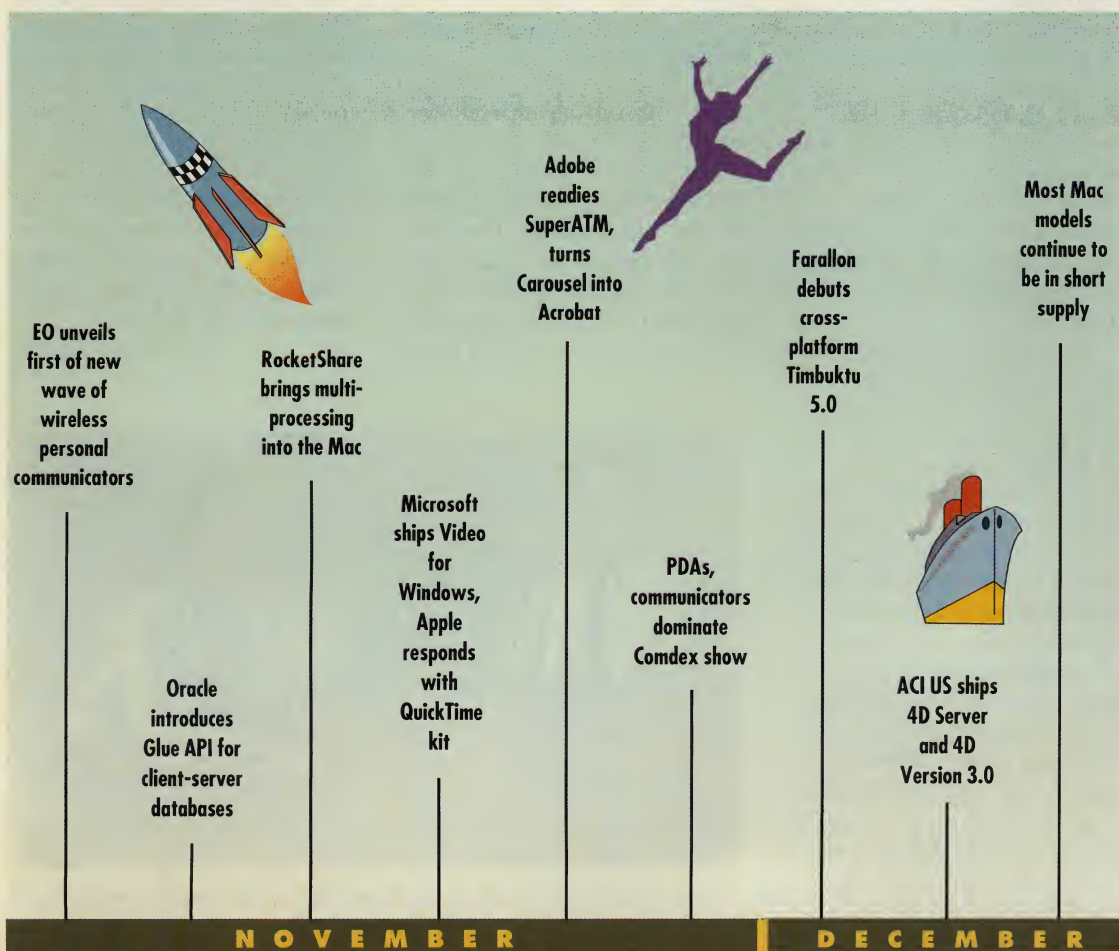
And vendors are wrestling with complexity deep inside AppleTalk. Routers can choke on today's multi-protocol traffic, a situation that must be remedied before a new generation of network services can make its impact. Solutions include two schemes for WAN tunneling: Apple's AppleTalk Update-based Routing Protocol and the third-party-supported Dr. Pepper.

But the fundamental fact every network developer and manager will have to face is that, by the end of 1993, more computers will be interconnected than ever before. Management mavens, such as Tom Peters and Peter Drucker, suggest that companies link LANs so that customers can check quality from the moment a product is first designed. While reducing the time to market, such a strategy is destined to give network professionals fits.

1993's users will wander around with smaller, lighter computers, and that may drive wireless networks into the mainstream. Look, for instance, for infrared transceivers from Photonics Inc., which will let PowerBooks talk to their deskbound siblings.

Apple will spring some wireless surprises of its own. One of the company's critical strategies is to support System 7 file sharing and OCE from any place at any time. Apple has demonstrated AppleTalk Remote Access running on the Cellular Digital Packet Data service developed by IBM Corp. and McCaw Cellular Communications Inc.

The rapid appearance of Asynchronous Transfer Mode (ATM) and other multimegabit technologies indicates that desktop computers could provide users with many more views of corporate data than they did last year. By the end of 1993 or during 1994, these technologies, particularly ATM, could erase the distinction between LANs and WANs. — *By Mitch Ratcliffe, editor at large, and Stephen Howard, technical editor*



"The server's down."



There's something for everyone in '93

There's little doubt that 1993 will be a memorable one. The Knife reports a sharp upsurge in RAM and spreadsheet sales in Britain as the curious attempt to figure out an equitable way to calculate the queen's income taxes, now that her obscenely wealthy highness has decided that the time has come to pony up the cash.

With the books closed on 1992, it's unclear exactly what the size of the final bill will be, but the Knife reports that a special envoy has been sent to Redmond to plead for a one-off version of Excel with more rows and columns.

No doubt that same envoy will next stop by Cupertino to find out if the fastest Quadra is up to the gargantuan task. If this envoy should ask the Knife, which hasn't happened so far, the answer will be positive because the flood of more powerful, cheaper machines will only intensify in the new year.

In February Apple is planning to release a whole passel of new '040s, with more to follow as the year progresses. There'll be something for everyone, from a low-cost color Classic to more models to further confuse the middle portion of the product line to specialized multimedia boxes. Apple's apparent goal here is to keep up a high level of visible excitement about these more traditional Macs as it works feverishly behind the scenes on the PowerPC machines that are slated for a public coming out in 1994.

But computers based on the PowerPC are only a part of the new stuff on the horizon. There's also the Newton and IBM-pollinated products such as the Sweat Pea handheld CD-ROM player and Kaleida ScriptX, the multimedia cross-platform development tool.

In short, there should be enough activity to keep us sufficiently distracted at least for the first part of the year. After that, things might get a little boring as Apple devotes all its energies to the 1994 models. But that just means we'll all have more time to devote to monitoring the growing backlog of orders that can't be filled because of a faulty manufacturing output-to-demand ratio.

Sweet dreams. Throwing reason and caution to the wind, the Knife is betting that Microsoft

will continue to dominate the Mac applications market, regardless of the outcome of the fed's probe into its business practices. The core rewrite of Word, which will be shared by both the Mac and the Windows version, almost guarantees that the fun and games won't end.

In fact, the Knife thinks that the trend of greater success of the big developers, including Microsoft, Claris, Adobe and their ilk, will continue. Unlike the early years, in which anyone with time, talent, determination and a good compiler could turn out innovative new software for the Mac, the future of software will be almost totally dominated by the big boys and girls. Let's hope the spirit of innovation and the attitude of can-do survives anyway.

And wasn't it Microsoft that started this silly "year of" craze in the first place by declaring the Year of the CD-ROM? Seems like that phrase was first issued out of Redmond in either 1939 or 1940.

It doesn't really matter because a byproduct of the growth of the multimedia market is that CD-ROM drives will become, if not as common as the mouse, at least as common as the trackball on those little gray Macs.

But the chicken-and-egg problem isn't completely solved yet. In fact, the success of the coming low-end CD-ROM-equipped multimedia Macs will depend a lot on how nimble third-party developers are at getting consumer titles on the shelves.

The Knife reports that developers, including the mainstream recording labels, are already at it, which is a good sign. It's all well and good to provide your children with electronic versions of standard reference works, but the really big money is in music. By this time next year our kids will have experienced a greater intimacy with pop icons covering the narrow range from Madonna to Marky Mark than the corporate types who run MTV or even the great Ethel Merman ever could have imagined. All this and word processing too.

Maybe this emerging field will be one place where the smaller developers can still make a difference, too. There's always hope.

Keeping in touch. On-the-go computing is another trend that will intensify this year. This in turn will increase the demand for more and better networking solutions.

Wireless networking will come into its own in 1993, made possible by such advances as the well-publicized marriage of cellular technology and modem technology. You also can expect to see more and more Ethernet connections as users demand high network throughput. File synchronization will replace job-security anxiety as the No. 1 water-cooler conversation topic.

Of course, all this increased demand for more networking options will mean that many Mac managers will find themselves spending more and more time in the closet, but such are the risks.

Channel triad. This year also will bring further changes in the way Apple sells its products.

This definitely is not good news for those hardy souls who bet the farm on establishing an Apple specialty dealership back in the days when Apple itself pledged eternal loyalty to those who sold its products. As part of this trend, Apple will finish the job it began in 1992 of killing off its educational resellers.

In place of the old channel, Apple is creating a three-tiered affair that it thinks will help get those brown boxes moving. Macintoshes will continue to be hawked by those courteous consumer-electronics stores. For the solution-hungry business person, the Apple value-added resellers will provide sustenance.

Finally, for those who prefer to shop from the comfort of the home or office, mail-order sales will be an attractive third alternative. If Apple's controversial experiment with the Apple Catalog proves successful, you can bet that the concept will be expanded this year. Some sources claim that MacConnection and some other mail-order outfits will at long last realize their dream of gaining Apple's authorization to sell Macs.

Meanwhile, the surviving traditional Apple dealers will become as rare in 1993 as a happy Republican in November.

So things will be different next year. Like the man said, change is good. □



GA: QuickTime to QuickDraw

Look back. Last year started with a bang, as Apple debuted QuickTime, its multimedia extension. Suddenly Mac users had digital video and graphics synchronized with sound. A torrent of QuickTime products followed, such as SuperMac Technology's VideoSpigot capture board and DiVA Corp.'s VideoShop, a movie editor. And in almost no time, QuickTime tools hit their second generation, culminating with Adobe Premiere 2.0, a movie editor with hooks to high-end video hardware.

As usual, Adobe Systems Inc. set the pace for font technology. In February, Adobe released its first multiple-master fonts, which let users control such type parameters as weight and width. Last month Adobe integrated multiple-master technology into SuperATM, a font-substitution utility.

On the 3-D front, distributed rendering hit the market with releases from Specular International Ltd. and Ray Dream Inc. The chasm between 2-D and 3-D was bridged with Adobe's Dimensions and Ray Dream Inc.'s addDepth, programs that add depth and perspective to 2-D objects. Meanwhile 3-D type programs, such as Pixar's

Typestry, further blurred the line between 2-D and 3-D.

A handful of low-end painting and drawing programs, including Deneba Software's artWorks and Expert Color Paint from Expert Software Inc., also made their debut, giving users 24-bit painting and drawing for less than \$200.

Color inkjet printers made a strong showing last year with Hewlett-Packard Co. shipping its HP DeskJet 550 and Lexmark International Inc. releasing its IBM Color Jetprinter PS 4079, a RISC-based printer that outputs tabloid-size pages at 360 dpi.

Companies such as Microtek Lab Inc., Epson America Inc. and Fujitsu Ltd. introduced color flatbed scanners that were cheaper and handled higher resolution than their predecessors.

In the pre-press world, companies picked up the pace of halftoning with application-specific integrated circuits such as Adobe's PixelBurst, Agfa's Halftone Accelerator and Linotype-Hell Co.'s TurboPix.

Look forward. System extensions from Apple, due this year, will lay the groundwork for improved graphics handling and device-independent color on the Mac.

QuickDraw GX, an object-based graphics foundation, will offer multiple-master-like font handling, an open print architecture and sophisticated typographic functions. For developers, QuickDraw GX will simplify programming graphics routines. For users, this should translate into increasingly sophisticated and less expensive graphics applications.

In addition, Apple reportedly will kick off the new year with its first color-printer foray, like Lexmark International's color inkjet, sources said the \$2,600 Apple Color Printer will be based on Canon U.S.A. Inc.'s Bubble Jet engine, but it will be limited to a serial interface and will lack a processor. With a little luck, Apple and Adobe will release the long-awaited rewrite of the LaserWriter driver, so Mac users finally can tap into the features of PostScript Level 2.

See Graphics, Page 34



"First I needed a Mac. Then I needed a color Mac. Then I needed a laptop Mac. Now I just need a life."



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THE NEW LOOK OF OPTICAL.

Graphics

From Page 32

The Mac's pre-eminence as a graphics platform will get squeezed in 1993. Silicon Graphics Indigo workstations will get Adobe Photoshop, Illustrator and QuickTime. Sun workstations will get Adobe graphics applications running with Display PostScript. Microsoft Windows machines are getting a graphics edge, with digital-video software from Apple and Microsoft Corp., a forthcoming port of Photoshop, and a slew of graphics hardware. Throw in a revised version of QuarkXPress for Windows that can exchange files with the Mac, and more graphics departments will likely supplement their high-priced Macs with relatively cheap clones.

Making peace among platforms could be Adobe's Acrobat, a system that will let users create and exchange formatted documents among Macs, Windows and Unix machines. — By Neil McManus, associate news editor, G/A



The industry: Market share, not margins

Look back. The bottom line for those in the Mac business in 1992 was simple: Less was more.

While overall Mac sales were up, prices plummeted and margins shrank, forcing many companies to shed workers, consolidate operations or merge with others to cut costs. And an ongoing recession didn't help.

Apple set the pace of the Mac industry's business spirit for the 1990s. The company continued to reduce Mac prices and stress market share over gross margins as buyers increasingly treated computers as commodities.

That strategy set off a chain reaction among Mac developers, many of whom were forced to reduce their product prices so they would be more in line with Apple's new CPU prices.

The same fierce competition
See Market share, Page 36

1992 Dubious Achievement awards

The Cafeteria OS Award

To: Apple

For: Its new "We wanted to make only the people who use (fill in name of important feature) pay for it" slogan.

It's been a

busy year

with lots of

boo-boos

deserving

special

attention.

The Can't Chew Gum and Walk Downstairs Award

To: All Apple MBAs

For: Figuring out the "demand" part of the supply-and-demand equation but remaining weak on "supply."

The Vaporware Award

To: Symantec Inc.

For: Mac Q&A, which posed the Q: How many months of "unofficial" demos can you offer before shipping a product?

The Easy Way Award

To: Microsoft Corp.

For: Word 5.1, the only "ease-of-use" upgrade that managed to make an already difficult product even harder to use. What do those icons mean anyway?

The Largest Contribution of Grist to the Rumor Mill Award



To: Gordon Eubanks (above) and Eugene Wang

For: Setting Silicon Valley abuzz by getting caught with their passwords down.

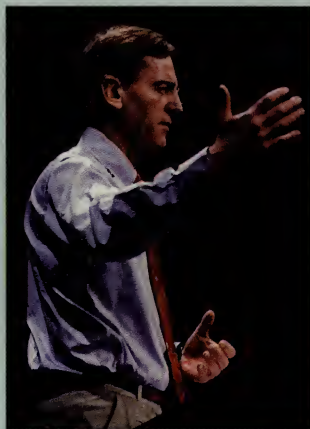
DANUTA OTFINOWSKI

The Phil Lipetz Memorial Hijacking Award

To: Claris Corp.'s MacWrite Pro team

For: Shattering the world word processing vaporware records set by such erstwhile champions as HabaWrite and FullWrite Professional. Note that Claris managed to ship its Windows products on time.

The 1992 Steve Jobs Memorial Award



To: John Sculley

For: Managing to get his picture in more magazines, getting quoted in more newspapers and making more stump speeches than all three presidential candidates combined. Makes you wonder who's really running things back in Cupertino.

CHUCK NACKE

The Still Crazy After All These Years Award

To: Apple USA

For: Not having the guts to authorize mail-order houses to sell Macs and instead coming out with the inexcusably lame Apple Catalog that sells select CPUs at retail.

The Unclear on the Concept Award

To: Farallon Computing Inc.

For: Finally figuring out it was a networking company.

The Family Values Award

To: Apple

For: Taking a Mac LC II, putting some integrated software on its hard disk and then selling it as a new computer, the Performa 400, to people who don't know better.

The Feet of Clay Award

To: Adobe Systems Inc.

For: Giving its upcoming platform-independent document-distribution software, Adobe Acrobat, a name that signifies nothing.

The Sincerest Form of Flattery Award

To: Apple

For: At Ease, Windows for your Macintosh.

The 57 Channels And Nothing's On Award.

To: Apple USA

For: Another year of channel gutting that resulted in the mass suicide of many traditional dealers. With Apple authorizing company's like Sears, you have to wonder if the remaining independent Apple dealers have some kind of a preoccupation with pain.

While there

wasn't space

to mention

all the Mac

industry's

faux pas,

here's a

select few

that went

above and

beyond the

call of

mediocrity.

The Another Year, Another Division Award

To: Claris

For: Claris Clear Choice.

The We Invented It First Award

To: Microsoft

For: For another year of Microsoft Windows see, Microsoft Windows do (MAPI, Windows for Workgroups and Video for Windows).

The Quick Fix That Never Should Have Been Needed Award

To: Apple

For: Taking only days to replace System 7 Tune-Up 1.1, the wrong one, with System 7 Tune-Up 1.1.1, the right one.

The Fickle Finger of Fate Award



To: All Macintosh third-party developers
For: Helping to develop great new markets that Apple can hijack. Look out, it looks like business-stealing as usual for Apple in 1993.

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Devil's dictionary for 1992

AURP: Lighthearted sitcom about a wacky radio station in Cupertino.

Casper: The friendly vaporware.

Duo Dock: Where Batman and Robin park the Batmobile.

Enterprise computing: Term explaining why you can't communicate with folks in other departments — it's not because they're aliens, it's because the network isn't set up right.

Integrated software: 1) A program that comes with the computer you bought at Circuit City; 2) A program that causes a little Mac company to become integrated with a bigger one.



Mobile computing: Alabama's aggressive development plan to create a high-tech oasis in the deep South.

Newton: An Etch-A-Sketch with a spoiler.

OCE: (Other Computers Elsewhere) The Windows for Workgroups research project.

ODBC: OD-la, life goes on, right!

OLE: (Occasionally Leaked Excellence)

Lively flourish performed by Microsoft after Apple published and no one subscribed.

Performa: A matter of form, rather than substance (in other words, appearances are everything).

PowerPC: An Intel Pentium-based Macintosh.

PowerOpen: What you need to fix a PowerPC.

QuickDraw GX: The latest model Toyota sports coupe.

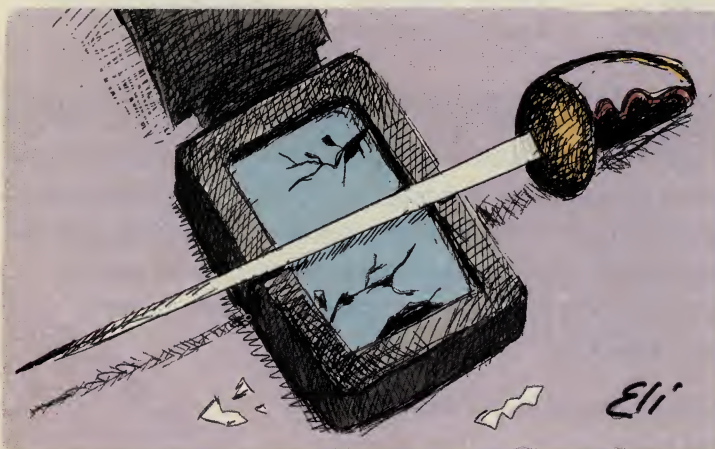
QuickTime: Any weekend you don't have to work.

Sweet Pea: Popeye's illegitimate child.

VITAL: (Vapid, Incomprehensible Try at Acronymic Levity) Apple's amazing reverse-engineering project in which a set of technologies are developed until they become marketing concepts.



ILLUSTRATIONS BY CHAD KUBO



The first PDA was sword-based, but it failed early testing, so Apple switched to the mightier pen.

Market share

From Page 34

among IBM PC and compatible vendors, which resulted in hardware and software price wars earlier in the year, finally hit the Mac side.

Apple, slashed prices twice on Macs to compete with cheaper CPUs from Dell Computer Corp., Compaq Computer Corp. and IBM Corp. That dropped the computer maker's gross margins — which hovered at 47.5 percent in 1991 — to 44 percent (and falling) last year. And company officials told financial analysts in August that in 1993 gross margins could dip below 40 percent for the first time.

Users responded by buying Macs in record numbers in 1992, including some 400,000 PowerBooks.

As Apple cut prices to compete, it revamped its distribution network to sell a wider variety of Macs to the lucrative small-business and consumer markets. The company broke from previous strategy and began offering products through mass merchants such as Circuit City Inc. and Sears, Roebuck & Co., consumer-electronics stores such as Silo Inc., and Apple's own mail-order catalog.

Look forward. Industry observers said a flexible distribution strategy is essential for any company to compete — not only in computer but particularly in the personal digital assistant market, which is expected to grow from \$85 million in 1991 to \$8 billion by 1995, according to Dataquest Inc. of San Jose, Calif. So it seems more of Apple's products will be going through mail-order and general-merchandising resellers in 1993.

Another inescapable force last year should be bigger this year: Windows. A slew of Mac developers devoted their time and money writing applications for Microsoft Corp.'s graphical user interface in pursuit of a larger, untapped market.

"The superiority of Windows business applications makes it difficult to ignore Windows and continue to buy Mac," said Eric Weidl, a computer analyst at the University of Chicago.

Indeed, the Software Publishers Association estimates the Windows applications market, measured at retail, topped \$1.3 billion in the first nine months of 1992, up 119 percent from the same period in 1991. Mac sales, by comparison, rose 27 percent to \$742.2 million.

Another trend likely to continue in 1993 is consolidation. Although few deals matched the merger of MacroMind-Paracomp Inc. and Authorware Inc. (now Macromedia Inc.), they showed a willingness among companies to pool resources and highlighted the difficulty of being a start-up today. — By Jon Swartz, associate news editor, BusinessWatch

1993 may be Mac's finest year

THIS YEAR THE MAC could become a far richer, more powerful and more complex computing platform than it is today — if Apple can bring to fruition a number of initiatives it has already announced, and if third-party developers provide the software to take advantage of these innovations.

In terms of hardware, 1993 will bring the most-dramatic changes of Apple's product line since the introduction of the Mac. The release of the company's first handheld personal digital assistants will generate the biggest splash, but changes in the Mac family itself, as well as Apple's peripherals line, will make more difference to business users.

The new line will bring more color than ever before to Mac computing, as Apple follows this week's rollout of its first color scanner and printer with the introduction of a color Classic and color PowerBooks. The 68040 will come down into Mac midrange, while at the high end Apple will offer its first dedicated servers and a new series of powerful multimedia-oriented systems that use digital signal processors to supplement the power of the '040.

And by year-end, with luck, PowerPC-based Macintoshes may make their appearance, although the first units could disappoint users who had hoped that RISC would mean a radical revolution in performance.

While bringing greater diversity to its product line, Apple will try to sustain the gains in unit sales and market share it has racked up over the past two years, especially at the low end and in the laptop market. To do so the company will have to find ways to improve its forecasting and make its supply, assembly and distribution systems more responsive to market demands. Otherwise, it could face more of the shortages that have angered customers, frustrated resellers and, ultimately, limited sales this fall.

Developments in system software will mostly take the form of new, separately marketed system extensions. OCE (Open Collaboration Environment) will provide the foundation on which workgroup computing could become a reality, while AppleScript could bring the benefits of Apple event-based automation and program linking to a wider audience. QuickDraw GX will provide a new printing architecture, system-level support for advanced graphics function, a new font format and typographical controls.

Within the year, users also may see some interface enhancements to the Finder and a major update to A/UX, offered under the PowerOpen rubric and incorporating a new kernel developed by IBM Corp.

Just what all this will mean in the trenches of corporate computing depends largely on third parties. If developers take a wait-and-see approach to the new system extensions and the PowerPC, and choose instead to devote their resources to the booming Windows market and the potential of NT, the practical impact of Apple's vast R&D efforts will be limited, and Mac managers and users, as well as the company itself, could be left wondering just how much future the company has in the business-desktop market. But if developers respond with prompt updates and innovative applications that take advantage of new Apple technology, the much-touted "Mac advantage" could get a new lease on life.

For MacWEEK itself, 1992 was a year of extraordinary growth, one that at times left us, like Apple, struggling to keep up with demand. But we look forward with enthusiasm to reporting and interpreting the changes 1993 will bring. — By Henry Norr, editor



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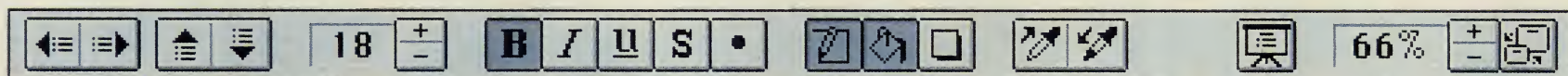


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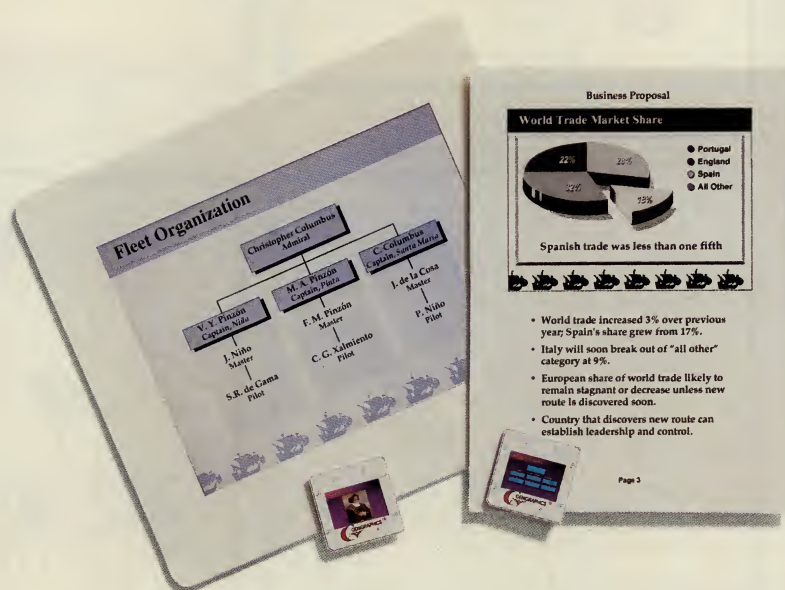
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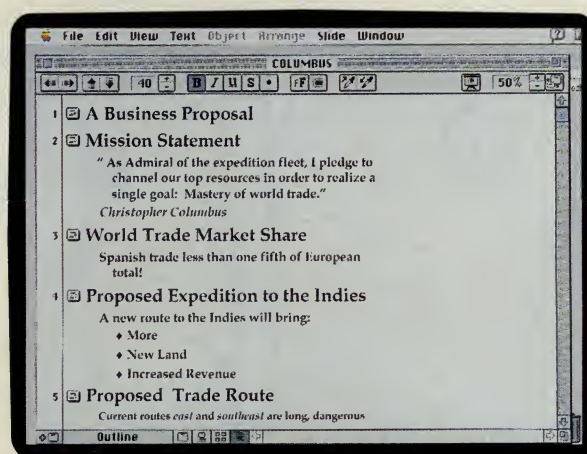
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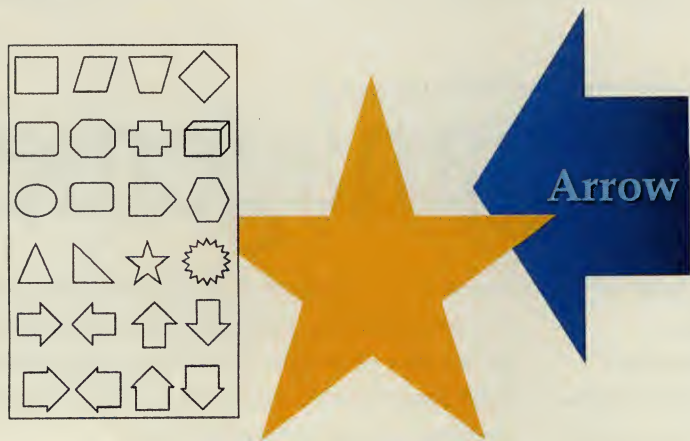
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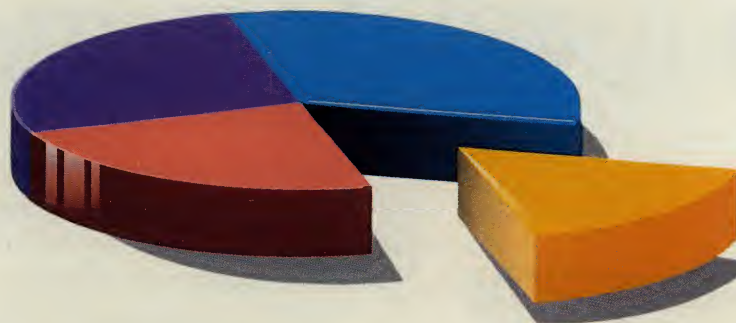
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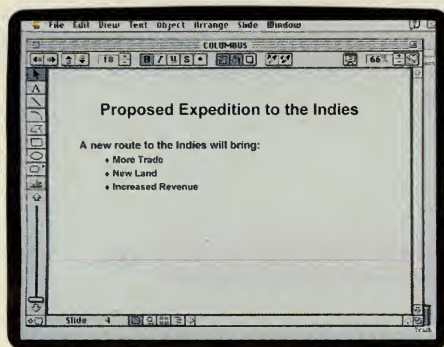
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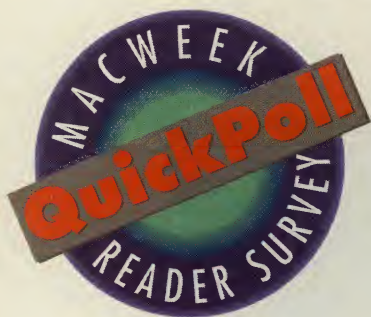


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QuickPoll shows PowerBook preference at the high end

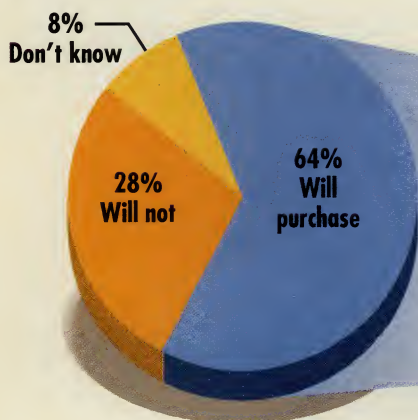


Among sites buying PowerBooks, 57 percent will purchase 180s, while 32 percent will buy Duo 230s.

MacWEEK's latest QuickPoll indicates that PowerBooks will maintain their brisk sales during 1993. The high-end 180 model garners the greatest purchase interest, according to the survey, followed by the Duo 230. These laptop purchases likely will yield a net increase in the installed base of Macintosh computers, since most MacWEEK work locations will buy PowerBooks in addition to desktop Macs, rather than as replacements.

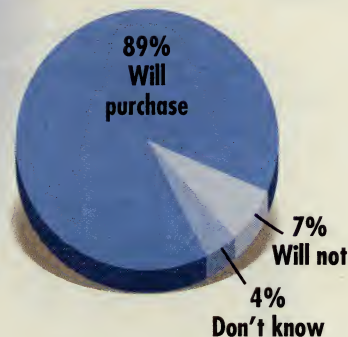
This QuickPoll phone survey, conducted three weeks after the October rollout of Apple's latest laptops, reflects the opinions of more than 200 Macintosh managers, all knowledgeable about their companies' purchase plans for PowerBooks. Six in 10 (61 percent) survey respondents report that PowerBooks are used at their work locations, while 46 percent have Intel-standard laptops. The model

Companies planning to purchase laptops or notebooks



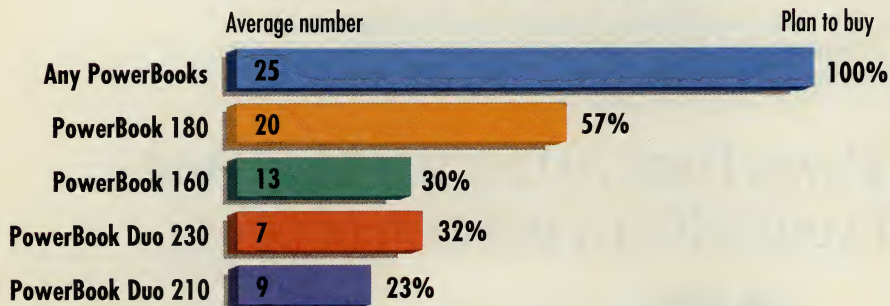
Base: Total respondents

Companies planning to purchase PowerBooks



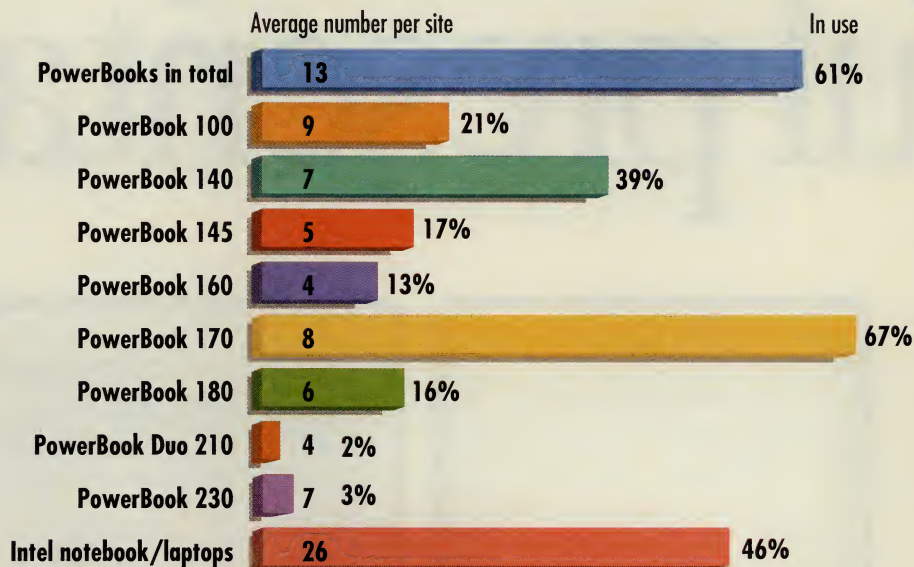
Base: Will purchase laptops

PowerBook models planned for purchase



Base: Will purchase PowerBooks

PowerBooks and Intel notebooks currently in use at work site



Base: Total respondents

170, Apple's former high-end portable, is the model most likely to be found at one of those PowerBook sites (67 percent). The PowerBook 140, at 39 percent of sites, is next in popularity, followed by the 100 at 21 percent. Overall, subscribers at PowerBook sites report an average of 13 PowerBooks installed, while those with Intel laptops have an average of 26 installed.

► **Purchase plans.** Two-thirds (64 percent) of the respondents work at locations that plan to buy laptops within the next 12 months; most of these (89 percent) intend to buy PowerBooks. At these sites, the PowerBook 180 emerges as the front-runner, with the Duo 230 next in purchase interest, followed closely by the 160 model. About one-quarter of the sites will buy the PowerBook 145 (25 percent) or the Duo 210 (23 percent).

On average, these work locations will acquire 25 PowerBooks in the next year. Four in 10 surveyed said that they will buy some of the new PowerBooks in place of other planned machine purchases. Three in 10 say that some PowerBooks will replace planned desktop Macs, while one in 10 said they will replace Intel-based desktops or laptop purchases. On average, seven of the average 25 PowerBooks planned for purchase will replace other Mac or Intel computer purchases.

► **End users.** Eighty-two percent of those people at sites buying PowerBooks report that their work locations will purchase some new PowerBooks as additional computers to use with desktop Macs. Only one-third report that some PowerBooks will replace Mac desktop computers currently in use. At two-thirds of the sites, some PowerBooks will go into a pool from which they will be used as needed. Among this group, an average of 33

percent of the PowerBooks being purchased within the next year will be pooled.

► **Network usage.** These PowerBooks are not all destined to be stand-alone computers. Eighty-three percent of respondents note that they will connect at least some PowerBooks locally to on-site networks. Among this group, more than half (52 percent) will use Ethernet to connect PowerBooks to LANs. Sixty-eight percent expect some of the new PowerBooks to access LANs from off-site via telephone connections. Of these PowerBooks, 30 percent, on average, will use AppleTalk Remote Access.

► **PowerBook usage.** Whether on-site or off-site, the vast majority (83 percent) report that the new PowerBooks will be used for electronic mail, and an equal percentage predict that the laptops will be used to access file servers. Faxing is popular, though more often to send (63 percent) than to receive (49 percent). About half (51 percent) of the sites surveyed intend to use some of the new PowerBooks to access on-line services, such as CompuServe.

► **Add-ons.** Of all the PowerBook products users at surveyed sites planned to purchase, the most popular are tools for mobility: batteries and battery rechargers. Internal modems are much more popular than external modems. In addition, half the respondents expect to purchase external monitors, while 40 percent will buy external hard drives.

► **Color.** Two-thirds of respondents at locations purchasing PowerBooks indicated interest in color-equipped models. The majority, however, would not expect to pay more than a \$500 differential over a comparable monochrome model. □

The QuickPoll was conducted by phone among 209 randomly selected business locations that receive MacWEEK. Interviews were conducted in November 1992 with people identified as most knowledgeable about upcoming PowerBook purchases at their companies. An independent research firm, Market Probe International of New York, was responsible for all survey details. Procedures followed established market research standards.

Double-duty PBs save money, ease file-version headaches

A PowerBook-Duo Dock combo may be the right answer for those who need a Mac on the road and at the office.

By Larry Stevens

A solid minority of people are using their PowerBooks as their only computer — on their desktops as well as on the road. Managers are adopting this strategy, enticed by cost savings as well as knowing that one machine can reduce confusion about file versions. According to the accompanying MacWEEK QuickPoll, among sites planning to buy PowerBooks in the next 12 months, 38 percent said they are planning to buy either a Duo 210 or 230, the Apple laptops specially designed to do double duty as a desktop Mac when combined with a docking station.

Twenty-eight percent of respon-

dents at sites that plan to purchase PowerBooks will use some of these PowerBooks to replace desktop Macintoshes.

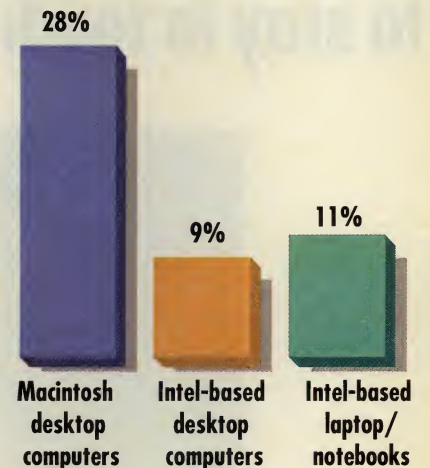
Duo systems. The Duo system consists of a scaled-down PowerBook for traveling and a docking station called the Duo Dock that turns it into a desktop machine. The PowerBook part of the system (either a 25-MHz 210 or a 33-MHz 230) contains a hard drive but no floppy drive and only a few ports. The deskbound Duo Dock includes a floppy drive, NuBus slots, all the ports found on desktop Macs and extra video memory. While the docking station can contain a second

Some sites will purchase PowerBooks in place of other microcomputers



Base: Will purchase PowerBooks

Sites purchasing PowerBooks instead of ...



Base: Will purchase PowerBooks

hard drive, most users will likely opt to use this second drive for archiving, backup and rarely used applications. By relying on a single hard drive for day-to-day work, users can be assured of having the right set and version of files while traveling or while at the office.

File versions. Needing to have the latest versions of files has led more than one user to decide to ditch the desktop and rely entirely on the PowerBook.

For example, Bob DeLaurentis, technology manager at a major pharmaceutical company, said, "The bane of the existence of those who have two machines is dealing with versions of files." He said he has a number of applications to help control file versions on database files but still has problems with utility programs such as address books and date books, as well as graphics files (see story, Page 142).

"The computer is supposed to make it easier to keep track of people and events," DeLaurentis said. Yet confusion can easily arise, he

said. "When you're using two machines and have to remember in which you updated an appointment or an address, [it can be confusing]."

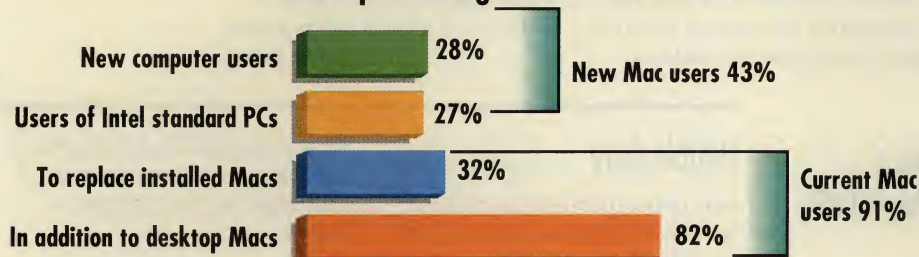
While DeLaurentis does use a deskbound hard drive to which he sometimes connects his PowerBook, he uses it primarily for storing applications he doesn't often need or to archive older files. He does all his day-to-day work on his PowerBook and its internal drive.

Office in a box. Chris Altweeg, vice president of strategic planning at Herring/Newman Inc., an advertising company based in Seattle, has a PowerBook because he spends about 50 percent of his time on the road visiting dozens of California clients. Until recently, Altweeg was a two-computer man, transferring files between his desktop and PowerBook with floppies. But, he said, "No matter how careful I was to try to transfer all the files I would need for a trip, invariably something I wanted to work on was not with me."

Sometimes those missing files

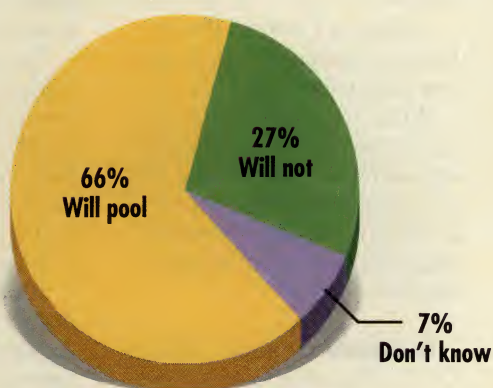
See Double duty, next page

Sites purchasing PowerBooks for ...



Base: Will purchase PowerBooks

Sites that will pool PowerBooks ...



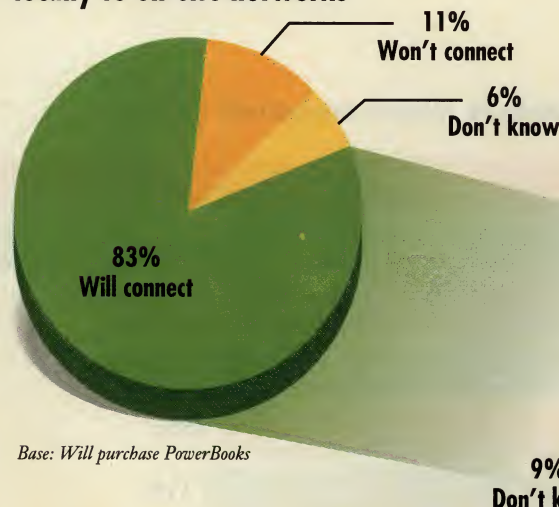
Base: Will purchase PowerBooks

... will pool one-third of their newly purchased PowerBooks, on average



Base: Will pool PowerBooks

Sites that will connect new PowerBooks locally to on-site networks



Base: Will purchase PowerBooks

... through Ethernet



Base: Will connect PowerBooks to LANs

Most PB users telecommunicate to stay in touch with their offices



ILLUSTRATIONS BY CHAD KUBO

By Larry Stevens

Most people use PowerBooks to take work away from their job site. They use the telephone to stay in touch with that site.

Because of this, as a group, PowerBook owners may be the heaviest telecommunication users. According to MacWEEK's Quick-Poll, 68 percent of sites that plan to buy PowerBooks expect some users to dial in to LANs. Other telecommunications uses are common also; most of these sites expect PowerBooks to be used for sending and receiving faxes (64 percent) and accessing on-line services (51 percent).

Here are three examples of the diversity of modem uses.

Staying in touch. Bob DeLaurentis, technology manager at a major pharmaceutical company, uses a PowerBook and a modem to stay in touch with his clients and

co-workers while he is on the road. Each day, he receives dozens of electronic-mail messages, he said. Some of those need immediate attention. Others can wait until he gets back to his office.

So each day at 4 a.m., his PowerBook automatically makes two mail calls: one to CompuServe and the second to his company's internal E-mail system.

When he gets out of bed, his first step is to check his internal E-mail to see if any messages require immediate attention. Next, he checks three special CompuServe mailboxes whose numbers have been given to clients who require immediate attention. Finally, he scans his regular CompuServe mailbox for critical messages.

Whenever he has a free moment, he types out responses on his PowerBook and transmits them.

"By the time lunch is over, I've disposed of most of the ASAP messages, and I can begin working on the less important ones," De-Laurentis said.

DeLaurentis travels at least two days each week. Last year, before he used his PowerBook for telecommunications, his assistant would fax him any important E-mail mes-

sages. But, he said, "It was hard for people back at the office to decide what's important and what isn't."

Corporate connections. For Gregory Carson, CEO of Ondrox Inc. of Londonderry, N.H., telecommunications isn't a means of keeping in touch with E-mail partners but of connecting to the corporate mainframe.

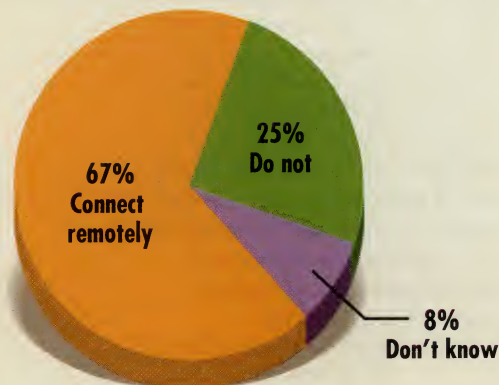
Ondrox's salespeople, who sell long-distance telephone services, used to write orders on slips of paper, fax those orders to the main office and call back later for confirmation. "It was very inefficient," Carson said. "Each order required at least two to three calls to complete, and problems and revisions could increase that number to seven or eight."

Now salespeople dial in to the corporate order-entry system from their hotels or at a customer's office. The order is entered and a

See *Telecom*, next page

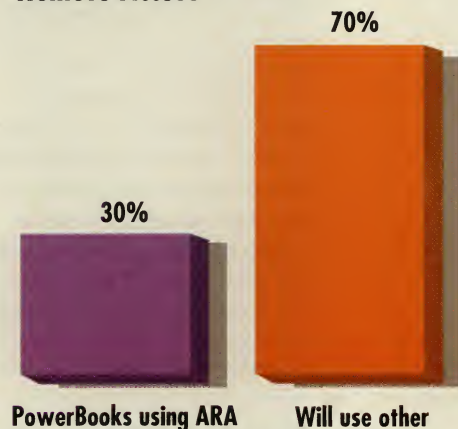


Sites connecting PowerBooks remotely to on-site networks ...



Base: Will purchase PowerBooks

... will connect almost one-third of their PowerBooks using AppleTalk Remote Access



Base: Plan to connect PowerBooks remotely

PowerBook telecommunications usage



Base: Will purchase PowerBooks

Double duty

From previous page

were critical data that his customer needed. Other times, if he had had the right files, he could have caught up on backlogged projects.

Now that he uses only a PowerBook, when that computer is with him, he is sure he has everything he needs.

"As long as I have my PowerBook, my complete office is wherever I flop myself down," he said.

While many PowerBook owners use their machines for traveling and for take-home work, others, who remain at work but who are often called away from their desks, also find a one-computer solution efficient.

Complete toolbox. William Cook, technical adviser at Pitney Bowes Inc. of Stamford, Conn., is responsible for computer support. When traveling from office to office, rather than borrowing computers at each site and displacing workers, he brings his PowerBook. "It's like a toolbox," he said. "When you call an electrician or plumber, you don't expect them to have to go back to their shop or to borrow your tools. In the same way, I want to be as unobtrusive as possible."

He even prefers the design, Lilliputian as it is, to that of a full-size machine.

He said: "The screen is about the size and resolution of my old Plus. I

like the trackball. And the keyboard is the size of the Underwood that I was trained on in the military — it feels like coming home."

Small screen and keyboard.

While some users have no problem with the PowerBook's diminutive screen and keyboard, others have opted to add hardware that provides greater ergonomic comfort.

For example, Michael Seldin of Seldin & Associates, a market research company in San Francisco, is willing to suffer with his PowerBook's small screen when he is on the road. But in his office he plugs his PowerBook into an external monitor and keyboard.

Seldin's one-computer solution doesn't merely replicate the ergonomics of a desktop, it improves on it. By having two monitors — the PowerBook's and an external screen — he is able to display more windows simultaneously.

"When I'm on the road, I have a system that's almost as comfortable as a desktop," Seldin said. "At the office, it's better. Why should I buy a second computer?"

Other companies are finding that when users opt to do all their work on a PowerBook, they can't unless they add a large-screen monitor. For example, Mark Warner, a member of the technical staff at U S West Advanced Technologies of Boulder, Colo., said his department uses a database written in ACI US

See *Double duty*, next page

Telecom *From previous page*

confirmation number is issued in seconds. Additionally, revisions or any problems, such as a customer who is behind in payments, can be flagged and ironed out on the spot.

"The system has increased our efficiency by 300 percent to 400 percent easily," Carson said.

Ubiquitous printer. For Jack Zigon of Zigon Performance Group, a performance-appraisal consulting company in Wallingford, Pa., a modem provides an easy way to give customers hard copies of files. He simply sends the files, via his fax modem from PSI Integration Inc., to the nearest fax machine.

Zigon said: "When I realized that a portable printer would be almost as heavy as my PowerBook and take up a lot of briefcase room, I came up with this idea. Every company and hotel has a fax — many are plain-paper. I just fax the information I want to present and hand the paper to the client."

However, while the idea was clever, it turned out not to be as simple to execute as Zigon had thought it would be. Sending a fax from his hotel room to the

hotel's fax machine was not a problem. But sending one from a company's telephone to the same company's fax machine can be difficult. Often the company's internal phone lines were digital or the telephones were multiline. In either case, they could not accept outgoing faxes.

And most company executives that Zigon was meeting with didn't know where to find a single-line analog telephone jack.

Zigon finally realized that the only internal lines that were sure to meet both those requirements were those on which fax machines were connected. Most companies have a number of fax machines, sometimes sitting next to each other. So now Zigon unplugs the nearest fax machine, plugs his PowerBook's modem into the jack and dials the number of the next nearest fax machine — or if possible the nearest plain-paper fax. "It's like having a printer at every port," he said. □



Double duty *From previous page*

Inc.'s 4th Dimension that was developed for a 640-by-480-pixel monitor. When using it with the PowerBook's 640-by-400-pixel screen, some of the application's control buttons at the bottom do not appear on the screen.

To solve his problem, Warner equips the PowerBooks at his company with The Outrigger, a SCSI monitor from Outbound Systems Inc. "The only other choices," he said, "would be to rewrite the program to fit on the smaller screen or force everyone to use a desktop [machine]. Neither of those were acceptable."

Security. One final worry that some PowerBook users who have only one computer have to consider is security. Whenever all your data is carried under your arm, there is a chance of it falling into the wrong hands.

Institutions such as banks and insurance companies may have a legal responsibility to keep data confidential. Additionally, since their users often tie into a corporate database, there is potential for serious damage if important passwords or access software are stolen.

One major Manhattan life insurance company that declines to be identified now has 4,500 laptops and notebooks, of which 10 percent are PowerBooks.

Users can download data about

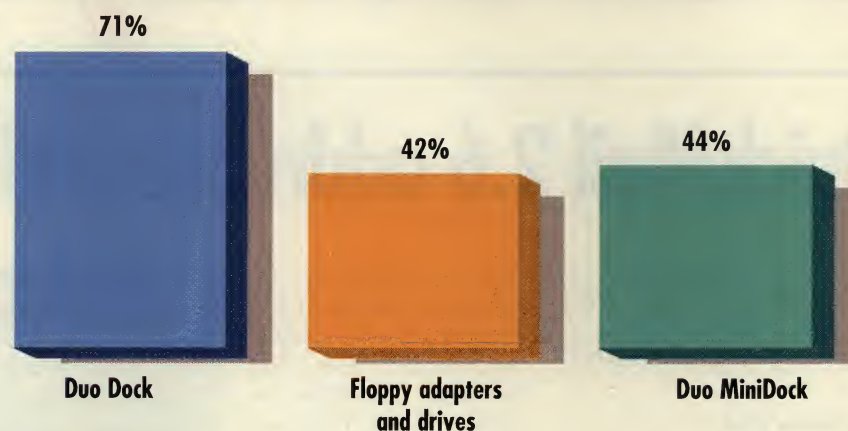
clients or upload insurance applications. To protect the data, the company's information systems manager said: "We have administrative procedures as well as software for protecting downloads and uploads. We also strongly encourage our agents to be careful with their passwords. But even if an unauthorized person does get to see the data, we make sure that while it may be interesting, there is nothing that's sensitive on the notebooks."

Notebook users are locked out of certain files, such as medical files, on the corporate database. People who need access to sensitive data have to access it from desktop machines, so they don't have the option of using only one computer.

Most users who plan to have the PowerBook as their only computer do have to think about, and find ways to overcome, the downsides. Issues of security, ergonomics and computational power have to be considered. But solutions are available for most of the problems with using a PowerBook as your only computer. And for many, having everything in one spot adds up to a tremendous benefit. □

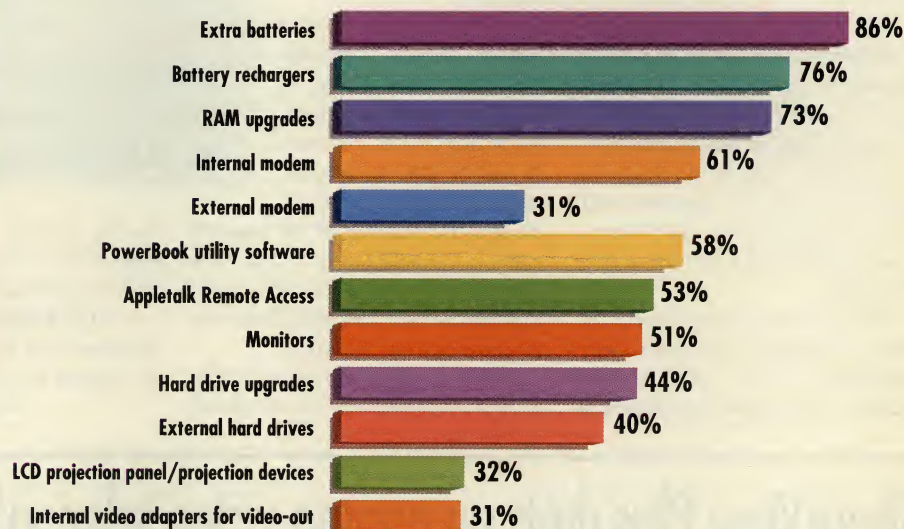
While many PowerBook owners use their machines for traveling and take-home work, others also find a one-computer solution efficient.

Add-on products planned for purchase for PowerBook Duos



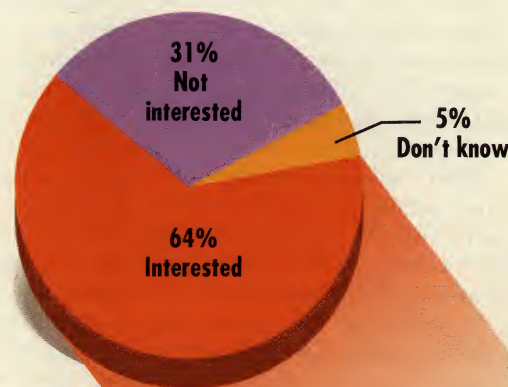
Base: Will purchase PowerBook Duos

Add-on products planned for purchase for PowerBooks



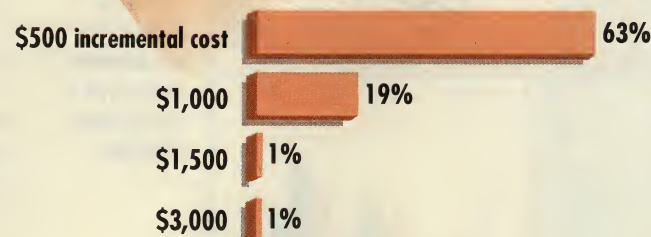
Base: Will purchase PowerBooks

Purchasers express interest in color PowerBooks ...



Base: Will purchase PowerBooks

... but few of them would pay more than \$500 for active-matrix color screens



Base: Interested in color PowerBook



QuickMail 2.6 addresses reliability

Update smooths out server performance

By Nathalie Welch

West Des Moines, Iowa — CE Software Inc. is preparing a revision of its QuickMail electronic-mail system aimed largely at improving reliability.

Server and administrative improvements make up the bulk of the changes in QuickMail 2.6, which will be demonstrated this week at Macworld Expo in San Francisco.

CE Software plans to release the upgrade in the first quarter, with prices ranging from \$649 for a 10-user pack to \$4,749 for a 100-user pack.

"We have not experienced too many consistent problems with QuickMail 2.5.1," said Michael Fielden, information systems man-

ager at BBDO Inc., an advertising agency in Los Angeles, "but the package is relatively slow, and although installation is quick and easy, if there are any problems it can be very difficult to troubleshoot."

QuickMail components enhanced in Version 2.6 include:

► **QM Server.** QuickMail's server software was rewritten using a more reliable architecture, according to CE Software. It will be able to support up to 32 active sessions, double the number of the current version. QuickMail 2.6 also will include a store-and-forward tracking feature that lets administrators monitor current activities.

The new server can run on Macs alongside AppleShare 3.0 or System

QM's latest delivery

QM Server:

- Improved reliability
- Compatibility with AppleShare 3 and System 7 file sharing
- Support for up to 32 simultaneous sessions
- Store-and-forward tracking

QM Administrator:

- Remote administration of user lists
- Move user and backup tools
- Improved file-based support for DOS users

7's file sharing. (AppleShare 3.0.1 resolved the incompatibility between earlier versions and QuickMail 2.5.1.)

► **QM Administrator.** Network managers will be able to add, delete or change user accounts from any

See QuickMail, Page 46

ShareView Plus dials up analog video teleconferencing

Transmits color video via 14.4-Kbps modem

By Nathalie Welch

San Jose, Calif. — No, you're not seeing what I am saying! If you've ever tried to describe an object or event to a co-worker by talking them through it over the telephone, you may have an easier time of it after ShareVision Technology Inc. ships its video teleconferencing system.

ShareView Plus, a \$4,499 video teleconferencing system due later this month, will be the company's first offering in a new category it calls desktop visual communications

(see MacWEEK, Aug. 3, 1992). The system, which includes two NuBus cards (one for data communications and the other to handle video compression-decompression), a video camera, ShareVision's On-Sight software, and a telephone headset and handset, will send and receive color video images, voice and shared data via a 14.4-Kbps modem connection.

Other videoconferencing systems, including Northern Telecom's Visit and Compression Labs Inc.'s Cameo, require Switched 56 or access to digital telephone service.

"It definitely has some very attractive features, such as the ability to use a standard phone line," said

Tim McElgunn, senior analyst at Datapro Research of Delran, N.J. "The product offers a lot without having to bring higher data rate lines to the desktop."

ShareView Plus lets users share ideas on a common whiteboard or collaborate in third-party applications, such as Microsoft Excel or Microsoft Word 5.0, even if one conferencee does not have the program installed. The ShareView application also lets users save a video record of a conversation or take a 16-bit-color snapshot of the video image window.

ShareVision will use a proprietary compressor-decompressor technology called Vector Adaptive Transformation Processing (VATP) to fit video images, voice and data onto an ordinary telephone connection. VATP files can be played back by QuickTime 1.5-compatible player applications.

"Videoconferencing companies offer higher video quality and higher data rates," McElgunn said. "But they are also higher-priced and less excited about putting out low-end video systems."

ShareVision Technology Inc. is at 2951 Zanker Road, San Jose, Calif. 95134. Phone (408) 428-0330; fax (408) 428-9871. □



ShareVision's ShareView Plus will let users participate in color video-conferencing and document sharing over a single analog phone line.

TribeStar combines LocalTalk hub with fast bridge to Ethernet

By April Streeter

Emeryville, Calif. — Tribe Computer Works will put a new arrow in the quiver of network managers battling LocalTalk's bandwidth bottleneck this week at Macworld Expo.

TribeStar, due next month for \$1,795, can take the place of a router and a hub on a LocalTalk network segment by bridging traffic between its eight LocalTalk ports and a single Ethernet port simultaneously. This minimizes network perfor-

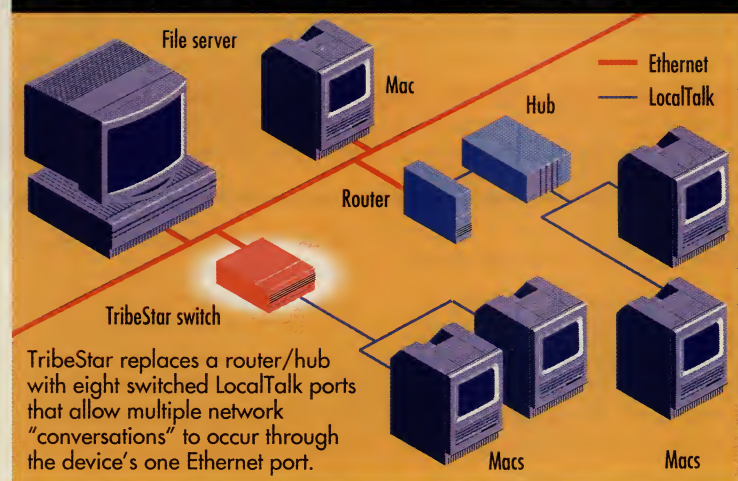
mance degradations when multiple LocalTalk users try to access Ethernet services, the company said.

TribeStar uses switching technology to establish multiple, simultaneous network links between up to eight senders and receivers. Since the TribeStar bridges instead of routing traffic between LocalTalk and EtherTalk, processor-draining routing tables are not maintained.

"TribeStar lets you get the best

See Tribe, Page 46

Tribe switches LocalTalk to Ethernet



TribeStar replaces a router/hub with eight switched LocalTalk ports that allow multiple network "conversations" to occur through the device's one Ethernet port.

NEVIN BERGER

Focus stokes Ethernet price war; cuts adapter prices to under \$100

By April Streeter

Woburn, Mass. — Focus Enhancements Inc. this week will slash the cost of installing Ethernet by cutting the price of some Macintosh adapter cards to below \$100.

The company, which sells its products directly to users, will offer four cards at \$99.99: the EtherLAN II, a NuBus card with thick and thin connectors; the EtherLAN II-T, which provides thick and 10BASE T connectors for NuBus Macs; and the EtherLAN LC (thin) and LC-T (10BASE T) for Mac LCs. All four were previously \$149.99. Similar adapters from companies such as Dayna Communications Inc. and Asanté Technologies Inc. are more than \$200, while direct vendors, such as TechWorks Inc., charge just less than \$200.

Focus' external Ethernet SCSI

adapters, called EtherLAN SC, are also being knocked down in price, to \$199.99 from \$214.99. The EtherLAN eight-port 10BASE T hub dropped to \$199.99 from \$219.99. Focus' 14.4-Kbps Fax-Modem is reduced to \$299.99 from \$329.99.

Focus also has begun selling a three-port AppleTalk Remote Access server made by Cambridge, Mass.-based Cayman Systems Inc. Called the Rand•E, the server will sell for \$1,299. Cayman's own GatorLink is currently available for \$945 (see MacWEEK, Dec. 7, 1992) with the price returning to \$1,895 at the end of this month, the company said.

Focus Enhancements Inc. is at 800 W. Cummings Park, Suite 4500, Woburn, Mass. 01801. Phone (617) 938-8088; fax (617) 938-7741. □

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- MacUser

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award-winning cards providing Ethernet connectivity for every Macintosh platform—including solutions that will let you connect to future generations of Ethernet.

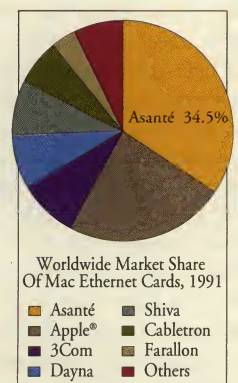
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Source: International Data Corporation, June 1992

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See Us At Macworld Expo Booth #3138

Apple gives Xmodem Tool a tuneup

Free 1.1 upgrades available at expo

By Nathalie Welch

Cupertino, Calif. — Apple will distribute free upgrades to its problematic Xmodem Tool at this week's Macworld Expo in San Francisco.

Apple Xmodem Tool 1.1, which will be included on the Communication Toolbox: Basic Connectivity Disk 1.1.1, corrects protocol and formatting problems found in the current Xmodem Tool 1.0.2 and adds a color configuration interface. Xmodem is a simple asynchronous file transfer protocol.

The new tool shortens transfer times. The previous version would repeatedly resend a block if it did not receive the proper code, ASCII

acknowledgment or cancellation codes in response after sending a block of data. The new tool is also less likely to accidentally cancel a transfer.

Updated to conform to the full MacBinary II standard, the new tool handles MacBinary II headers more efficiently. Before the fix, severe corruption of data could occur as a result of the tool's treating a secondary MacBinary header as part of the data fork of the received file.

Xmodem Tool 1.1 also supports high-speed modems, provides better support for low-memory operation and can convert Unix and DOS text files to Mac format by stripping nulls from received text transfers and converting LF-only and CR/LF line endings.

Xmodem Tool 1.1 will be available at Apple's Macworld Expo

booth and will be posted on AppleLink and the Internet at ftp.apple.com. Users also may contact third-party developers who bundle the tool to get the upgrade. □

Installer returns

Apple's Network Software Installer 1.3, designed to help clear up the confusion among AppleTalk versions, has itself become a subject of confusion.

The company posted the installer on AppleLink Nov. 25 only to remove it on Dec. 2, saying it was "inadvertently" placed online. Three weeks later, Apple promised to repost the installer before Christmas. The company had no additional comment.

MitemView development app polishes up performance

By Mitch Ratcliffe

San Jose, Calif. — Mitem Corp. last month shipped an upgrade of its MitemView development environment.

MitemView establishes a virtual terminal session between a mainframe or minicomputer program and a Mac front-end application to translate data and commands between the two. The application currently supports

ACI US Inc.'s 4th Dimension, Claris Corp.'s HyperCard and Aldus Corp.'s SuperCard on the Mac. Back-end translators, called "personalities," are included for IBM, DEC VAX, Tandem and Unix host-based systems.

MitemView 3.1 delivers faster performance, according to Mitem, because it uses a new Groups feature that lets developers mask and account for the complexity in a terminal session screen. Several different fields within a single terminal screen can contain relevant information; Mitem's Groups feature more easily identifies patterns in the terminal screen and parses relevant information from them into the

front-end application on a Mac.

The Groups function can be invoked by a developer in the Watch Host Operating Patterns Manager or through a new Group Editor interface in MitemView. New terminal patterns then can be added from a patterns list.

MitemView 3.1 will sell for \$7,000; runtime licenses are available.

Mitem also announced that the next revision of MitemView will add support for MacApp, Apple's object programming library.

Mitem Corp. is at 2105 Hamilton Ave., Suite 350, San Jose, Calif. 95125. Phone (408) 559-8801; fax (408) 559-7201. □

Tribe

From Page 44

[performance] you can out of LocalTalk. It can take a router's place without the bottlenecks," said Tina Hardwick, a Macintosh consultant who recently installed a number of beta-version TribeStars at a Santa Rosa, Calif., newspaper. "I can put file servers and printers on Ethernet and workstations on LocalTalk without spending the chunk of change it would take to install Ethernet on every node."

TribeStar's eight LocalTalk ports are powered by four microprocessors, while traffic through the Ethernet port is handled by a Motorola 16-MHz 68340 processor.

Aside from small workgroups that do not require gateway services and can substitute a packet-switching TribeStar for a hub-router combination, the company said the device will be useful in larger networks bogged down by a proliferation of routers.

Tribe Computer Works is at 1195 Park Ave., Emeryville, Calif. 94608. Phone (510) 547-7981; fax (510) 547-3928. □

QuickMail

From Page 44

Mac on the network. A Move User function will export a user account and associated messages from one QuickMail MailCenter for importing into another. A Verified Backup Tool will let administrators back up the contents of an active mail server.

The new version will offer faster operation when forwarding mail to and from the file-based MailCenters used by DOS QuickMail clients.

► **Gateways and directories.** BBDO's Fielden said a primary trouble area with QuickMail 2.5.1 concerned links to AppleLink and Connect on-line services. In Version 2.6, CE has enhanced the QM Link gateway to AppleLink by supporting new drivers from GE Information Services, the Rockville, Md.-based division of General Electric Co. that hosts the on-line

service. The new version also will support alternate-find routines in the NameServer, enabling users to access directory services from third-party developers, such as StarNine Technologies Inc. of Berkeley, Calif., from within QuickMail.

► **Client.** The Mac client will be spruced up with larger colored buttons, Undo for text editing and 31-character-wide zone lists.

All multi-user packs contain the QM Server, QM Administrator, DOS and Mac client software, several bridges and gateways, and a five-user pack of ON Technology Inc.'s Meeting Maker.

Upgrades are \$40 per server for users of 2.5.x. Customers with earlier versions pay \$15 per user.

CE Software Inc. is at P.O. Box 65580, 1801 Industrial Circle, West Des Moines, Iowa 50265. Phone (515) 224-1995; fax (515) 224-4534. □



Network Vital Signs 1.1 adds monitoring modules for Dayna Communications' PathFinder routers and Cayman Systems' GatorBox routers.

Network Vital Signs update extends monitoring capabilities

By Leonard Heymann

Salt Lake City — Dayna Communications Inc. is broadening the scope of its network-monitoring system and adding several ease-of-use features.

Network Vital Signs is a \$449 fault-monitoring application that provides status reports, performance data and fault alerts for AppleTalk networks. Version 1.1, to be released at the end of this month, will add several new features:

► **New modules.** The program will support Dayna's PathFinder routers and Cayman Systems Inc.'s GatorBox routers, in addition to Shiva Corp.'s FastPath 5.

► **No restarts.** Unlike the current version, network managers will not have to restart the Mac after reconfiguring monitoring parameters.

► **Shared information.** Network Vital Signs and Dayna's NetScope Console software will be able to share information gathered from the company's NetScope

Probe, a hardware device that provides network-traffic information. Currently, a probe cannot report to Network Vital Signs and NetScope Console simultaneously.

► **SNMP.** Dayna said it will add support for SNMP (Simple Network Management Protocol) when Apple begins offering it for AppleTalk devices. Although Apple has announced SNMP support, Dayna does not expect Network Vital Signs to support SNMP until later in 1993.

"SNMP information hasn't been useful to most network managers because of the complexity," said Nicole Davis, Dayna product-marketing manager for network management. "Our goal is to provide that same information in a very usable fashion."

The upgrade is free.

Dayna Communications Inc. is at 50 S. Main St., Salt Lake City, Utah 84144. Phone (801) 531-0600; fax (801) 359-9135. □

TokenPeek takes to packet trail

By Leonard Heymann

Walnut Creek, Calif. — The AG Group Inc. missed its expected ship date for TokenPeek, its packet analyzer for token-ring networks, but the company spent the time adding a set of innovative protocol-decoding tools.

The \$995 TokenPeek will be on display this week at Macworld Expo in San Francisco and is due to ship by the end of the month. It was first shown last summer at Mactivity '92 and was expected to be available by the third quarter of 1992.

The program will let administrators record and analyze traffic on token-ring networks in much the same way that the company's EtherPeek and LocalPeek products monitor Ethernet and LocalTalk networks. But several of TokenPeek's capabilities are new and will be

added to its Ethernet and LocalTalk versions, the company said.

► **Preconfigured filters** will help users identify specific traffic flows and network roadblocks caused by packet storms and router problems. Users also will be able to isolate specific types of traffic, such as AppleTalk Phase 1 or 2 and NetWare.

► **Thread intelligence** will discover and track a sequence of packets between two network devices automatically, highlighting details about specific network "conversations" within the stream of packets. TokenPeek will work only with Avatar Corp.'s LanWay Token Ring cards. A card-and-analyzer bundle will cost \$1,625.

The AG Group Inc. is at 2540 Camino Diablo, Suite 202, Walnut Creek, Calif. 94596. Phone (510) 937-7900; fax (510) 937-2479. □

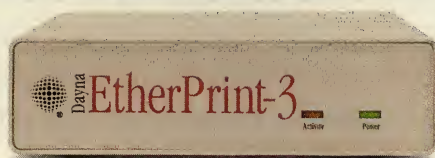


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Cross platform

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New Timbuktu for Windows 1.0

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- Supports over 25 network cards for Ethernet LocalTalk & Token Ring.
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- Multi-level password security.

- Supports memory managers including DOS 5.
- Extensive on-line help.
- Timbuktu for Windows PhoneNET® kit includes LocalTalk for ISA or MCA.



New Timbuktu for Macintosh 5.0

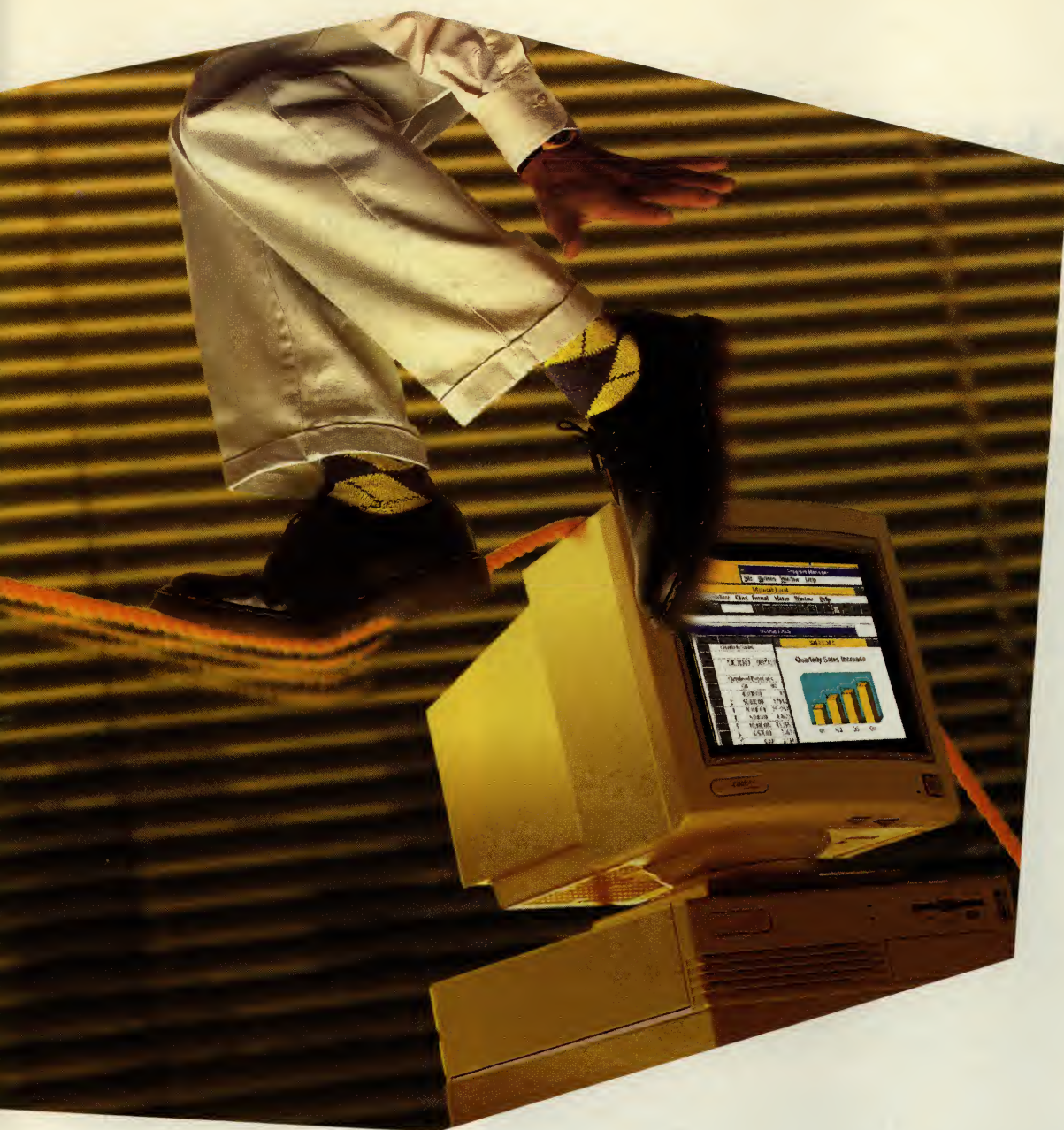
- High-performance file exchange and full 24-bit screen sharing.
- New connection documents automatically re-establish frequently used connections.
- Backward compatible with previous versions of Timbuktu.
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- Multi-level password security.
- Takes full advantage of Apple System 7.
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networks, so you still have access to corporate resources on AppleShare, NetWare or TCP/IP.

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Call today. We'll send you a free full-color copy of our product guide. It's that easy.
1-800-949-7761.



PCon cards let servers power hubs

By April Streeter

San Jose, Calif. — PCon Inc. next month plans to ship controller cards that let AppleShare or NetWare file servers double as LocalTalk hubs.

PCon's Network Controller Cards, priced at \$549, function as signal repeaters inside a net-

work server. The NB-1200 card will fit in NuBus Macs, while the MC-1200 and AT-1200 are designed for Novell Inc. NetWare servers running on IBM PC or compatible computers.

The hub cards, which will use a server's power supply, can reduce the clutter in a network wiring closet, the company said. Each card will

ship with 25- and 50-pin connector cables and the choice of a punch-down block or patch panel for connecting up to 12 LocalTalk nodes.

PCon made its debut in Mac networking last October with the PShooter, a \$599 LocalTalk hub. The company said the new cards will use that product's packet-regeneration scheme to reduce network noise and packet errors.

PCon Inc. is at 2984 Calle de las Flores, San Jose, Calif. 95148. Phone (408) 270-3200 or (800) 726-6462; fax (408) 274-4504. □

Mercury Systems adds scripting capabilities to Mac telecom app

By Nathalie Welch

Los Angeles — Mercury Systems Inc. this week will upgrade its entry-level telecommunications program to deliver scripting features.

Scripting promised in the original release for connecting to CompuServe, Dow Jones News Service, GENie, MCI Mail and other services will be included in the new release, along with a script that lets a user turn a Mac into a bulletin board system (see MacWEEK, July 27, 1992).

MacIntercomm 1.1's new scripting language will be compiled by the application rather than interpreted, so user-written connection scripts should execute faster than those in competing products, according to Mercury. A Record Script feature will write scripts based on user actions automatically.

MacIntercomm transfers files in the background, even when CPU-intensive applications are running in the foreground. Version 1.1 supports Macintosh Communications Toolbox connection tools; DEC VT52, VT102 and VT220 terminal emulation as well as TTY and 16-color PC-ANSI formats; and Xmodem, Ymodem, Ymodem-G, Zmodem and Kermit file transfer protocols.

The company also reduced the package's price from \$195 to \$129.95. Upgrades are free to registered users.

Mercury Systems Inc. is at 10000 Santa Monica Blvd., Suite 123, Los Angeles, Calif. 90067. Phone (310) 553-0881; fax (310) 553-1291. □

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Attachmate to offer direct SNA connection

By Nathalie Welch

Bellevue, Wash. — Attachmate Corp. this week will unveil a new version of its IBM 3270-terminal emulator and a coaxial card for connecting stand-alone Macs to mainframes.

Extra! for Macintosh 1.1, due later this month at \$425, gives Macs a direct connection to Systems Network Architecture networks via Attachmate's new Advanced 3270 Adapter/Macintosh, a \$750 NuBus coaxial card, or Apple's \$1,019 Coax/Twinax card. Like the initial release, Version 1.1 can be used by LAN-based Macs via Attachmate's \$50 3270 Gateway Option.

The new version will include auto-sensing technology, which, according to Attachmate, will recognize and configure the connection to the host's parameters automatically. The program also will include enhancements to its keyboard-remapping and file transfer features; users will be able to remap the Mac's modifier keys, such as Control and Option. The program also will convert Mac file names into mainframe-style names automatically during transfers.

Attachmate Corp. is at 13231 S.E. 36th St., Bellevue, Wash. 98006. Phone (206) 644-4010 or (800) 426-6283; fax (206) 747-9924. □

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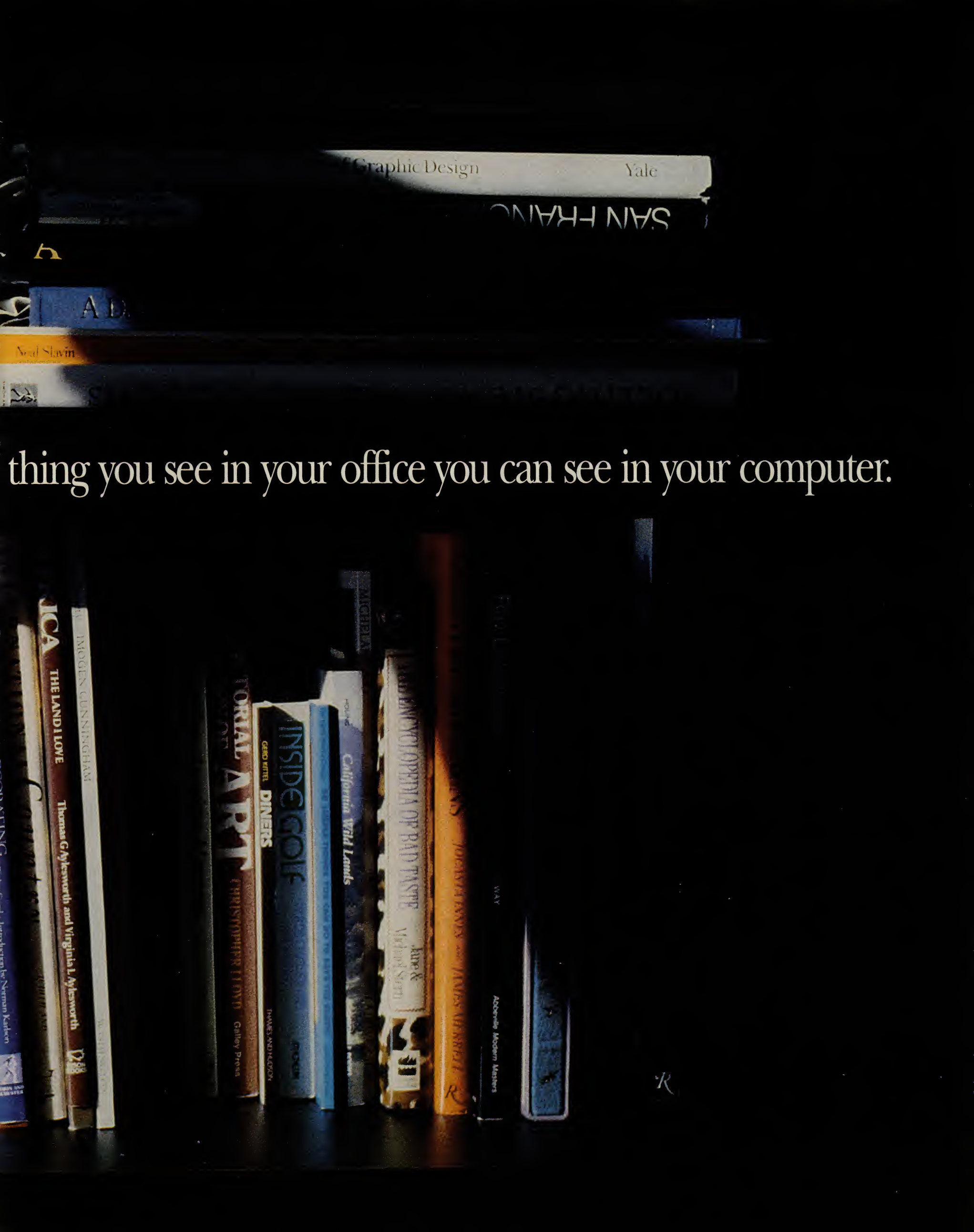
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News Analysis

What the new Bells could mean to you

With the OK to sell equipment and services, the Bell companies could pave the path to the future.

By Jeff Ubois

It's 1997 and you're beginning a day's work at your home office. A computer/television/smart telephone is at the center of your office and home-entertainment setup; the three appliances have merged during the past few years. A product of the convergence of computer and communications technology, this device will let you scan newspaper headlines and watch news clips from the BBC's worldwide news network before getting down to work.

Checking your electronic mail, which now includes video clips and sound recordings, you see that you have a videoconference with your co-workers scheduled for noon. The Clean Air Act required a 25 percent reduction in commuter miles in your city a few years ago, so these days your company's "travel" can be described in terms of telecommuter hours logged on the network.

After work, you can check your bank balance, pay your bills electronically and trade stocks in your portfolio on Tokyo's Nikkei exchange. Browsing the electronic classified ads for a new car, you send out a request for bid to local car dealers for a particular model. Finally, you order a movie that will play later in the evening.

That's a composite view of the computopia being touted by some of the regional Bell operating companies (RBOCs). Recent court, Federal Communications Commission and congressional decisions have freed the RBOCs to sell information, manufacture equipment, and compete with cable TV and today's information services.

While these new rules haven't yet had much effect, they are potentially as important to the shape of the nation's information infrastructure as any of the new technologies introduced in the past 10 years. The Bell companies' existing infrastructure, deep pockets, advertising budgets and billing organizations may put them in the best position to capture new home and business markets for information.

If they are able to sign on even a fraction of their existing subscribers, the Bells' role in the developing information economy will be critical. Bell company participation in the information-services market

will create 1.46 million new jobs and add \$110 billion to the nation's gross domestic product by 2001, according to a recent Bell-sponsored study by the WEFA Group of Burlington, Mass.

Monopolistic monsters?

Whether the Bells will help build a free market for information and new services or create information monopolies, ruthlessly squeezing out competition and limiting consumer choices, is considered an open question by many, including the National Newspaper Association, National Cable Television Association and Consumer Federation of America.

Detractors say news could be subtly censored if it were available only from the Bell companies. Videoconferencing services might be made available only to the well-heeled, stock trades might be reported to the Internal Revenue Service and various brokerage houses, classified-ad prices could be exorbitant, and movie rentals may be recorded and used to build up a buying profile on each household.

But others think the Bells can create new services for computer users and new opportunities for information providers, and offer a bonanza for the computer industry.

"Just as computer-system vendors like IBM and Apple have turned out not to dominate the market for software applications, I think it's likely that the market for information services won't be dominated by the Bells," said Mitch Kapor, founder of Lotus Development Corp. and chairman of the Electronic Frontier Foundation, based in Cambridge, Mass. "I don't think the phone companies have a huge natural advantage in understanding what consumers want or providing it."

"There is a big caveat, however, which is there has to be a level playing field for competition," Kapor said.

Building an open platform.

The solution, Kapor and others said, is for the Bells to focus on building an infrastructure to support their own services and

The telephone: From analog to information services

1878

Alexander Graham Bell transmits first words electronically.



1904

Telephones available coast to coast.

1910

Mann-Elkins Act brings interstate telecommunications under control of Interstate Commerce Commission.



1934

Communications Act of 1934 establishes Federal Communications Commission.

1957

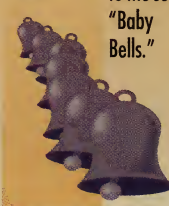
Hush-a-Phone decision: AT&T Co. must let users connect third-party phones to its network.

1975

FCC finally enforces Hush-a-Phone, ruling that AT&T is still using restrictive tariffs to limit third-party hardware access to its network.

1982

Department of Justice proposes a settlement of its antitrust actions against AT&T.



1983

Judge Greene dismantles AT&T, giving birth to the seven "Baby Bells."

1984

Judge Greene's Modified Final Judgment delineates rules of the new phone system. Bells may not sell information or equipment.



1987

Department of Justice recommends that Bells be free to sell information, video service and equipment.

1992

Judge Greene frees Bells to sell information. FCC rules that Bells can sell video services.

those offered by third parties.

"The Bells' interest would be best served if they turn the phone network into an open platform, if they used the same model as the computer industry where the PC became a standard platform," Kapor said. "But that is alien to their basic tradition and requires a real change in mind-set."

The analogy with personal computers is a popular one.

"The real power of the personal computer comes from the hundreds and thousands of people who have dedicated themselves to making them useful by writing programs," said Nathan Myhrvold, vice president for advanced technology and business development for Microsoft Corp. of Redmond, Wash. "We want the phone network to be a platform of that sort, not specific to a small number of services."

One of the leading contenders to

become a standard data service is ISDN (Integrated Services Digital Network), a technology backed by the EFF.

"Personal ISDN is far more important than the specific things like on-line directory assistance," Myhrvold said. "If you make a four-lane highway for data, it will benefit lots of services, not just the ones the phone company comes up with."

Content analysis. Building an open platform also would solve a vexing problem for the Bells — third parties could provide interesting content to fill the telephone network with billable traffic.

"The phone companies don't know much about the kinds of information people need; what they know is how to provide a conduit," said Denise Caruso, editor of Digi-

See Bells, Page 59

Regulations slip away for the RBOCs

Bureaucrats

will be the real decision makers about the future of telecommunications.

By Jeff Ubois

If the personal computer industry is the story of technology, individuals and dynamism, the story of the phone network is one of institutions, lawyers and bureaucracy. Predicting what they will do, or will be able to do, rests heavily on how an ongoing power struggle in Washington, D.C., shakes out over the next few years.

The Reagan administration hoped to ensure U.S. dominance of the world market for information technology by splitting the Bell system into regional phone companies and freeing AT&T Co. to compete in the computer industry.

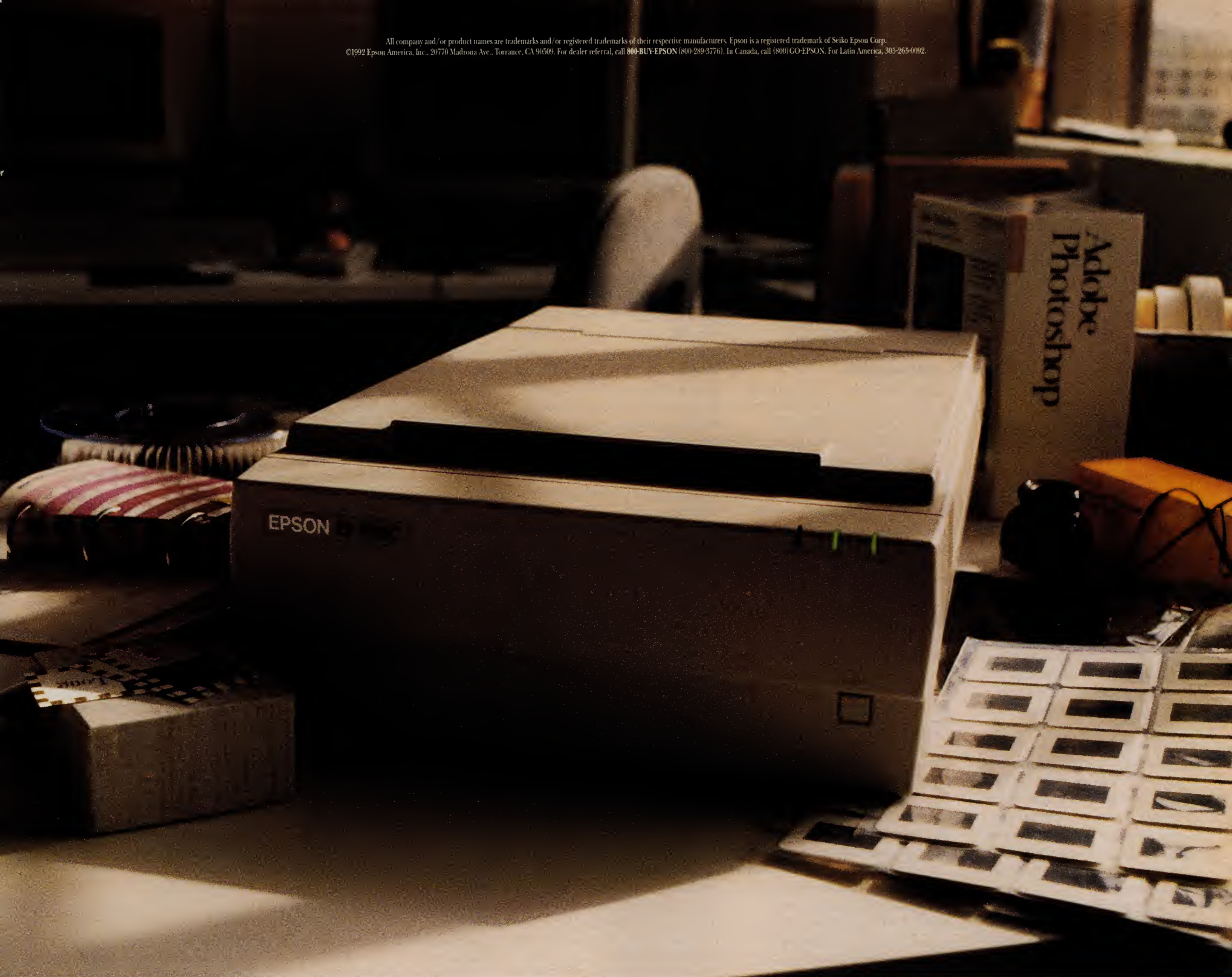
The breakup of the Bell system, completed in 1984, also was supposed to lower telephone bills; improve service; and create new opportunities for smaller carriers, such as MCI Communications

Corp. and Sprint International. AT&T's local phone service was turned over to seven regional Bell operating companies (RBOCs). The RBOCs were supposed to remain highly regulated and be prohibited from manufacturing equipment, providing long-distance service or selling information.

But those strict rules under which the Bell companies were to operate are gone now.

After an appeals court ruling last year, U.S. District Judge Harold Greene, the judge who executed the breakup in 1984, reluctantly admitted that as there was no certainty that the Bell companies could dominate a regional market, the Bells should be free to begin selling information. That put them in competition not only with electron-

See Regulations, Page 56



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Regulations

From Page 54

ic services such as Prodigy and CompuServe, but also with the newspaper industry.

The Federal Communications Commission last July expanded the Bells' marketing latitude, ruling that they could begin providing video — the so-called "video dial tone" — in addition to telephone services. That move placed the Bells in competition with the cable television industry.

The Senate last fall tried to break down the final barrier erected in 1984 when it voted to allow the Bells to begin manufacturing equipment. The bill did not pass in the House.

The question of letting the Bells compete for American telecommunications dollars was settled in the courts and by the FCC — their answer: Go forth and diversify.

What's wrong with the Bells? The Bells threaten some powerful entrenched interests — the newspaper industry, cable television providers, the computer-services industry and long-distance carriers, to name just a few.

Now, the Bells' competitors have taken their case to Congress, hoping to block the phone companies' entry into the information-services market. The newspaper industry and consumer groups in particular have backed a number of bills that would reverse the recent court and FCC decisions.

The most important of these is the Antitrust Reform Act of 1992, sponsored by Rep. Jack Brooks, D-Texas.

This would allow the Bells to manufacture equipment and provide information and long-distance services, but only after the Department of Justice and a court deter-

See Regulations, Page 58

Managers busy keeping track of their resources

Tools are growing in sophistication

By George Lawton

San Francisco — Mac managers are keeping closer tabs on the hardware and software on their networks with resource-management software, which they say is useful for making decisions about new software and hardware upgrades or when planning purchases, software upgrades and investments, and for troubleshooting.

Resource-management packages are typified by products such as ON Technology's STATUS*Mac, TechWorks Inc.'s GraceLAN and MacVONK•USA's netOctopus. These tools are not new, but they are growing in sophistication, especially as support for SNMP (Simple Network Management Protocol) is added to AppleTalk devices.

GraceLAN, when it first appeared, let the user take a peek at software installed on each Mac. Now it can generate informative reports to determine if, for example, any unlicensed software is floating around on the network.

Gary Fairban, editor of Western Producer in Saskatoon, Saskatchewan, has 26 Macintoshes on his network. For several years, he was forced to track the resources on that network using a complicated filing system.

"When you have one person trying to keep track of all the hardware and software, it can become a jumble of missing data," Fairban said. When he wanted to answer

some simple question about the state of the network, he faced a tiresome search through his records. "If we were lucky, most of the original papers were thrown into the same filing cabinet. Every time we tried to figure out what we had, it involved digging through the filing cabinet, because no one knew what we had," he said.

After loading GraceLAN onto each machine, he now can track all of the installed software and hardware on each Mac.

But he said GraceLAN sticks him with some limitations. The client software can provide information available from the local hard disk on each Macintosh. But he had to manually enter comprehensive information, such as the serial number, for each machine.

Even the basic information was enough to determine some things, such as the legality of his network. Fairban said he is concerned that some of the software on his network may not be licensed, which could cost Western Producer large fines. "A lot of times people pass software around when they move machines," he said.

He can do a software audit to determine if he has licenses for all the software actually installed. He said: "GraceLAN also is handy to make sure that people all have the current version of something. You may have thought you upgraded the whole company to 3.0, and some guy in the back still has 2.2. This can be serious if the new version is not backward-compatible."

Resource-management software can go beyond just looking at the

computers on the network, to making changes and installing software. Drew Deskur, network manager at Shiva Corp. of Cambridge, Mass., used to send a technician around to install a new software upgrade manually on each computer. That changed when he installed STATUS*Mac.

Recently, when he had to upgrade 120 users, Deskur created a distribution package with STATUS*Mac that was copied automatically to the hard disks of all connected Macs. He said, "Rather than have to play disk jockey to 120 users, it was all done overnight."

One of the limitations that all these resource-management packages have is that they must be manually loaded on to each machine to be managed. Chris Calande, president of Bay Area Macintosh Consultants, based in Mountain View, Calif., said: "I don't like the fact that I have to install another INIT on every single machine, just so I can run a report. We try and keep extensions down to a minimum."

The only resource-management application that doesn't require a custom responder is MacVONK•USA's netOctopus, which uses Apple's Responder.

In the multivendor environment, most Mac resource-management programs fall flat on their faces.

Help may be on the way. Apple has announced that it will release an SNMP agent in the first quarter of 1993. This Internet-community standard for managing networks could add a whole new level of functionality to resource-management tools.

According to Dave Kosiur, product manager at InterCon Systems Corp., versions of Apple's SNMP agent eventually will let managers look at the programs on any computer on a network, whether

it is a Mac or a Unix workstation.

InterCon's WatchTower is an SNMP-based network-management application that already provides cross-platform management capabilities. Apple's support for SNMP will give WatchTower users the ability to poll Macs for information about software and system resources. Currently, InterCon ships a custom SNMP agent with WatchTower.

Apple is also a member of the Desktop Management Task Force, which is working to extend resource management to any Macintosh, IBM PC or compatible, or Unix workstation.

The DMTF is still a few years away from delivering an industry-wide standard for all computers. But one day, network managers may find themselves staring at the heart of their networked PCs — from their Macs. □

Resource list

CSG TECHNOLOGIES INC.
Network SuperVisor
530 William Penn Place, Suite 329
Pittsburgh, Pa. 15219
Phone (412) 471-7170
Fax (412) 471-7173

FARALLON COMPUTING INC.
NetAtlas
2470 Mariner Square Loop
Alameda, Calif. 94608
Phone (510) 814-5100
Fax (510) 814-5020

INTERCON SYSTEMS CORP.
WatchTower
950 Herndon Parkway, Suite 420
Herndon, Va. 22070
Phone (703) 709-9890
Fax (703) 709-5555

MACVONK•USA
netOctopus
313 Iona Ave.
Narberth, Pa. 19072
Phone (215) 660-0606
Fax (215) 842-2071

NEON SOFTWARE INC.
LANsurveyor
1009 Oak Hill Road, Suite 203
Lafayette, Calif. 94549
Phone (510) 283-9771
Fax (510) 283-6507

ON TECHNOLOGY INC.
STATUS*Mac
155 Second St.
Cambridge, Mass. 02141
Phone (617) 876-0900
Fax (617) 876-0391

TECHWORKS INC.
GraceLAN
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Austin, Texas 78759
Phone (512) 794-8533
Fax (512) 794-8520

Bells might open another door to the home market

The regional Bell operating companies' new services could provide important opportunities for the computer industry, creating enormous demand for new hardware and software and opening another channel to reach the home market.

Bob Beran, director of information services for Bell Atlantic, said, "There is a wealth of new opportunities for the computer industry as a result of information services and video dial tone — it opens up new avenues to the consumer market for technologies that were traditionally targeted at business users."

In particular, Beran said computer companies would be needed to provide screen-based telephones, better user-interface design, compression and encoding technologies to enable video services, applications development, and server and storage technologies.

Apple, for example, is looking to provide innovative terminal equipment for Bell company services. "It is very important for us to establish very good

relations with infrastructure people such as the RBOCs (regional Bell operating companies)," said Apple spokeswoman Tricia Chan.

"We are actively in discussions with the [Bells], and we are exploring a bunch of opportunities," she said.

In particular, Apple is looking at ways to marry the communications capabilities of its Newton personal digital assistant technologies with new phone services, wireless voice and data networks, and user-interface design for new telecommunications services.

Microsoft Corp. said it aims to develop software for Bell company applications and for the new devices that will be required to access them.

"For Microsoft, we see a couple of roles," said Nathan Myhrvold, Microsoft vice president for advanced technology and business development. "One area is applications and systems software. Once you have wide-area communications and that much bandwidth, it makes it possible to have

remote information servers, commercial services that supply users with lots of data."

Other opportunities are emerging in the consumer-electronics market. "We are interested in creating software for new classes of equipment — intelligent televisions, smart phones, personal information terminals — those are all going to merge into a common set of devices," Myhrvold said.

But the integration of computing and telephony won't be easy, since the two industries are worlds apart.

"A cultural clash is almost bound to happen because the entrepreneurial PC industry approach is not the right way to dig up the streets — you only get to do that once," Myhrvold said. "Telephone stuff works on 10- to 15-year cycles, not 18-month cycles like the computer industry."

Despite the difficulties, optimism is running high. "I hope it will be an inspiration to another generation of entrepreneurs," said Mitch Kapor, founder of Lotus Development Corp. and chairman of the Electronic Frontier Foundation. — By Jeff Ubois

Cayman invites your FastPaths to a party!



It's one thing to retire a product when the next generation is running at full speed. Retirement is another thing entirely when there is no next generation. So FastPath™ owners might be interested in some ideas Shiva President Dan Schwinn revealed in a recent LAN Magazine interview:

"...in terms of a leapfrog product, we probably won't develop one..."

"...the focus of the company is not on routers, it's on remote access."

"By this time next year, we will be seen as a remote access company."

Now that Shiva is retiring from the router market, how long will it be before your FastPaths start retiring, too? Without a predictable stream of new software releases and hardware upgrade offers, your FastPaths may

be resigned to a future of steadily encroaching senility.

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Regulations

From Page 56

mines there "is no substantial possibility that the BOC (Bell operating company) can use its monopoly power to impede competition in the market it seeks to enter."

Though the Brooks bill passed through the Judiciary Committee, it faced opposition from FCC Chairman Alfred Sikes and failed to become law this year.

Still, proponents of the Brooks bill insist that the government must control the growth of the Bells, lest they become seven new monopolies.

"It just depends on whether you want to sacrifice diversity for efficiency," said former FCC Chairman Dick Wiley, now a lawyer in Washington, D.C., representing, among others, the National Newspaper Association. "Users are always benefited by a diversity of sources — that has been the magic of print media."

The NNA has been a leader in the battle against the Bells.

"Newspapers and other information providers now have to rely on a formidable competitor — the monopoly telephone companies — to transmit their own services," said Cathleen Black, president of the

National Newspaper Association. "Do you think we'll get equal service? It's like saying Newsday can only be delivered by the New York Times, or that Pepsi had to be delivered by Coke."

The Washington, D.C.-based Consumer Federation of America also supports the Brooks bill and

The Bells are in a position to provide some services, such as electronic Yellow Pages, more effectively than anyone else.

argues against allowing the Bells to provide information services.

"Since the breakup, the Bell companies' behavior has been a disaster," said Mark Cooper, CFA director of research.

The Bells have been found guilty and fined for a number of abuses akin to what might happen as they begin to offer their own information services, he said.

For example, the Georgia Public Service Commission found that Bell South had competed unfairly in the voice-messaging market.

Six of the RBOCs have been found guilty and fined by state public utility commissions for using revenues from local telephone services to underwrite new ventures.

"My rule of thumb is that every time they get caught, there are 10 times they didn't," Cooper said. "The probability they will be able to bamboozle the FCC in the future is fairly high."

With only 65 accountants at the FCC monitoring the billions of dollars in business the Bells do each year, Cooper said, it's pretty easy to pull the wool over their eyes.

The Bells strike back. The Bells contend their legal problems are the result of confusing rulings and tariffs by the host of regulatory bodies set to watch over them, and that their opponents are every bit as monopolistic.

"The Brooks bill is an initiative that caters to the interest of a few constituencies and, if it passes, will not only limit but set back the delivery of information services for many years to come," said Bob Beran, director

of information services for Bell Atlantic in Philadelphia. Rich advertising revenues are the driving force behind the Brooks bill and other anti-Bell initiatives, he said. "Clearly the biggest concern to the newspaper industry is the loss of their classified-ad base," Beran said.

The Bells' infrastructures may give them the ability to provide services for the public good that others can't without making vast capital investments. While Prodigy, for example, is working on achieving a 2 percent market penetration nationwide and is focusing on customers with average incomes far about the national average, the Bells may be in a position to provide universal information services without regard to user location and income.

Certainly, the Bells are in a position to provide some services, such as electronic Yellow Pages, more effectively than anyone else.

Perhaps more importantly, the barriers to the Bells' entry into information services are lower than those of most potential competitors, because they have in place today marketing and billing structures capable of reaching every household. They simply can begin

selling additional services to their existing customers.

Bell supporters point out that the Bells are simply in the same position within their markets that the newspaper and cable television industries are within theirs.

"You don't want to demonize a corporation nor say that they are better than anybody else," said Ken Robinson, an assistant to FCC Chairman Sikes. "I don't hear masses of consumers complaining about telephone service, but a number of the 96 million households who subscribe are upset about the cable business."

"The thing that bothers me about the newspapers is there are only a few of them that face a daily competitor," Robinson said. "The newspaper industry has statutory immunity from anti-trust laws, an immunity from child labor laws and is receiving about \$700 million a year in second-class mailing subsidies. I don't fault them for that, but to hold yourself up as a paragon of free enterprise and contrast yourself with the [RBOCs] as if they were monopolistic monsters seems to me kind of unfair."

Robinson pointed to the example of the Minitel system in France in defense of the Bell companies. Mini-

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tel is a text-based telecommunications service offered on the monopolistic French telephone system that is a platform for thousands of third-party services, including shopping, directories and on-line sex chat. The Bell companies could let small information providers gain access to large markets, Robinson said.

"One of the most positive things about Minitel was it provided a means for some 9,000 very, very small information providers to get into the business."

But the road to the Information Age will present many challenges and require a fine sense of regulatory balance.

"There is great potential for harm in terms of monopolistic practices by both the phone and cable companies," said Denise Caruso, editor of Digital Media: A Seybold Report, based in San Francisco, "but what they really want is to invest enough in infrastructure so some sort of ubiquitous networking will be possible. It would be sad to see regulations that make it difficult.

"Despite the fact they have these horrible business practices, they really are intent on providing better and more interesting and exciting services to consumers," Caruso said. □

Bells

From Page 54

tal Media: A Seybold Report, based in San Francisco, and longtime Bell company observer.

The Bells, for their part, seem to have taken this attitude as their own.

"Our strategy in the development and delivery of these services is one that is built on partnering with content providers," said Bob Beran, director of information services for Bell Atlantic in Philadelphia. "Despite all you read about conflicts, there are a number of discussions under way between the cable companies, newspapers, Bell companies and technology companies — we are all talking, we are all in various stages of venturing together."

Some small information providers (IPs) are particularly keen to work with the Bells.

"The question is, 'Why are small companies and IPs not concerned about the Bells as competitors?'" said Robert L. Smith Jr., executive director of the Interactive Services Association, which represents several hundred small information providers.

"The feeling is small companies see [RBOCs] more as partners who could provide resources for market

development," Smith said. "These companies know the content better than the phone companies ever will, they have less to lose, their resources are very limited, and the RBOCs are as good as anybody to partner with.

"Those opposing the Bells are more entrenched in the business and have the potential to lose more," Smith said.

One small company happy with the Bells' new role is PC Flowers Inc. of Oakton, Va., which dispatches floral deliveries nationwide from orders gathered by phone and from on-line services such as Prodigy. "They are my new best friends," said company President Bill Tobin.

Working with the Bells could allow sales through electronic Yellow Pages and through screen-based telephone phones. "They represent enormous potential for us," Tobin said.

Reality check. While the Bells and others are enthused about their potential offerings, so far most of the services proposed for the near term are rather tame.

Electronic Yellow Pages accessible via a smart telephone terminal or a computer screen are likely to be provided by all the Bell compa-

nies. While the initial offerings won't be much more than electronic versions of the familiar book, later generations of the service reportedly will let users query merchants for price and availability and place orders.

More sophisticated audiotex services, response systems that let callers navigate an audio menu using telephone keys, are available now.

A few of the Bells have begun small projects with newspaper publishers to give callers access to newspapers' headlines and news stories via audiotex. Similar services have been offered by newspapers for some time.

Bell Atlantic is among the first to provide a service that lets callers order information that is sent to their fax machines. Also, the company last month announced a partnership to deliver video to homes in New Jersey.

But industry observers said these kinds of services are not going to crack open the home and business information markets. Rather, they point toward more sophisticated systems that will provide graphical and intelligent front ends to such services.

Ubiquitous uncertainties. Vaporware abounds in discussions

about possible futures for Bell company services. Many of the potentially key transmission technologies — compression, wireless, Asynchronous Transfer Mode — are evolving rapidly, or, to put it another way, aren't yet stable.

The Bells haven't yet endured real competition from the cable television industry either.

While it's clear that both industries will be vying for the home market, as Myhrvold said, "The question is who will get there first — the cable companies or the phone companies."

In addition, the Bells could face stiff competition from AT&T Co. and the other long-distance companies. AT&T's purchase of a large stake in McCaw Cellular Communications Inc. last month may presage the telecommunications giant's return to providing local services, according to some observers.

Finally, the rules of the game set in Washington, D.C., are still evolving and are likely to undergo some substantial changes under the new administration.

In short, it's only the possibilities, not the actualities, that are now becoming clear. □

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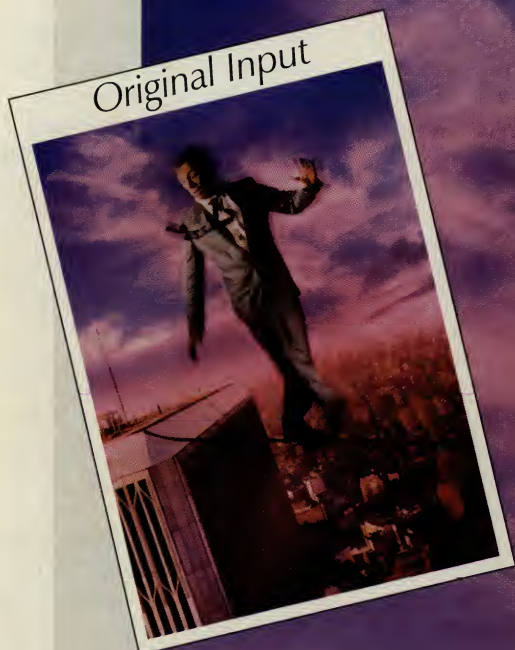
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Aldus drafts PageMaker sequel

Version 5.0 tightens typography, does seps

By Carolyn Said

Seattle — Aldus Corp. this week will lay out its plans for PageMaker 5.0, an upgrade with few major changes but a number of significant new features for power users.

The company will announce both Mac and Windows versions of the update at Macworld Expo in San Francisco and will ship them by summer. Enhancements will include:

► **Greater precision.** PageMaker 5.0 will offer rotation and skewing in 0.01-degree increments as well as horizontal and vertical reflection. Users will be able to edit rotated text and crop rotated graphics.

"Free rotation will open up space three dimensionally," said Sean Adams, design director at April Greiman Inc., a Los Angeles design company. "The previous version



PageMaker 5.0 will let users rotate text and graphics in 0.01-degree increments and open multiple publications, limited only by memory.

(which offered rotation of text in only 90-degree increments) locked you into a very rigid way of working."

The Control palette now will be visible in both Layout and Story Editor views.

► **Four-color printing.** PageMaker 5.0 users will be able to produce process-color separations from within the program. The current version is bundled with Aldus PrePrint, a color-separation program. "Being

able to do seps within PageMaker will make my life a lot easier," Adams said. Aldus will continue to sell PrePrint separately for \$495.

Aldus said printing speeds will be faster. PageMaker 5.0 will be able to print nonconsecutive pages in any order and will offer crop, registration and plate-identification marks.

► **Multiple publications.** PageMaker 5.0 will be able to open mul-

See PageMaker, Page 65

Authorware upgrade checks in with multimedia libraries, movies

By Neil McManus

San Francisco — Macromedia Inc. this month will release Authorware Professional 2.0, an upgrade that adds a content library to the multimedia authoring program.

The program will retail for \$4,995, down from \$8,000 for the previous version. Macromedia also is eliminating the runtime fee for custom applications created in Authorware.

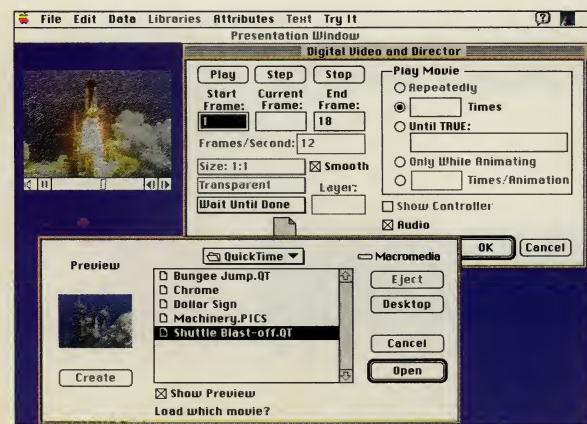
Version 2.0's new Media Manager library holds reference icons for graphics, sounds, videos and animations. Reference icons let users store

multimedia files outside an application. An icon can be used multiple times in a custom application, and changes to the original media will affect the entire project.

"The Media Manager saves a lot of disk space," said beta-user Gary Brandenburg, a principal at Iconos Inc., a multimedia production company in Minneapolis. "You can use the same sound over and over again without having to duplicate it. It's like using System 7 aliases."

The new version also adds sup-

See Authorware, Page 65



Users can add QuickTime movies and Macromedia Director presentations to custom applications created with Authorware Professional 2.0.

CoSA layers on effects with QuickTime program

By Neil McManus

Providence, R.I. — The Company of Science & Art has introduced a new program that offers QuickTime movie makers a variety of special effects and high-quality output to videotape.

Called After Effects, the program will sell for an introductory price of \$895 until Feb. 1, when it will rise to \$1,295. CoSA's 32-bit-color software offers high-end features such as:

► **Filters.** Users can change filter parameters over time using keyframes. After Effects comes with its own filters and can read Adobe Premiere and Adobe Photoshop filters.

► **Compositing.** After Effects lets users layer and composite an unlimited number of movies and PICT images. Layers can be repositioned, scaled, rotated, masked and filtered over time.

► **Variable frame sizes.** Users can include different frame sizes and aspect ratios within a composition. The program supports frames measuring up to 4,000 by 4,000 pixels.

► **Rendering.** Users can chain movies into one composition and render at the highest quality possible in a given amount of time. The software can render in the background.

RasterOps premieres MoviePak, moves QuickTime to full screen

By Neil McManus

Santa Clara, Calif. — RasterOps Corp. has rolled out MoviePak, a system that lets users capture and edit full-screen, full-motion QuickTime movies.

Available for \$1,999, the MoviePak daughterboard works with several RasterOps 24-bit video boards, including 24STV, MediaTime, 24MxTV and 24XLTV. MoviePak comes bundled with RasterOps' Media Grabber 2.1 video-capture utility and Adobe Premiere 2.0, a \$695 QuickTime-editing program.

MoviePak captures video in real time at up to 30 frames per second from NTSC, PAL (European) and SECAM (French) sources. It uses an LSI Logic chip and JPEG (Joint Photographic Experts Group) compression to play 640-by-480-pixel movies at 30 fps.

Sam Dewitt, manager at Cave Art Inc., a New York video-production

company, said he appreciates RasterOps' modular approach to video hardware. "You can start with just a display board and add MoviePak and an encoder later," he said. Competing systems, such as SuperMac Technology's \$5,999 DigitalFilm, offer video digitizing, display and encoding in a single package.

RasterOps also offers MoviePak and its bundled software as part of a \$4,697 package called The Editing Aces Suite. The package also includes MediaTime, a \$1,999 NuBus board that provides 24-bit color to 13-inch displays and handles CD-quality sound, and Video-Expander II, a \$699 external encoder that outputs video at 30 fps to composite, S-video and RGB (red, green, blue) devices.

RasterOps Corp. is at 2500 Walsh Ave., Santa Clara, Calif. 95051. Phone (408) 562-4200; fax (408) 562-4065. □



CoSA's After Effects includes controls for chroma keying, layering clips and special effects. Users can layer and composite an unlimited number of movies and PICT images.

► **Output.** The program provides subpixel positioning, anti-aliasing and field rendering for NTSC and PAL (European) video formats.

"Horizontal movements look smooth as glass because After Effects outputs in fields. You don't get the jittery movement you usually get from QuickTime output," said Randy Cates, president of Computer Animation & Design in Londonderry, N.H.

The program's compositing feature also impressed Cates. "I've made movies with 15 composited layers all moving simultaneously," he said. "There are \$200,000 [video-production] machines that can't do that."

The Company of Science & Art is at 14 Imperial Place, Suite 203, Providence, R.I. 02903. Phone (401) 831-2672; fax (401) 831-2675. □

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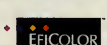
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Plug-in speeds TIFF image editing

FASTedit/TIFF opens parts of files

By April Streefer

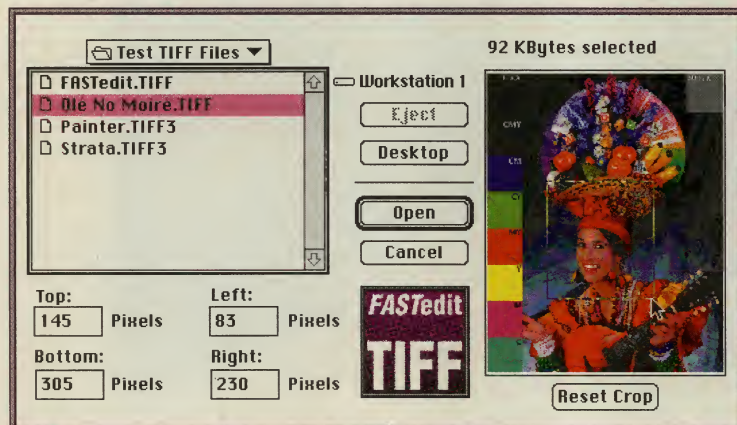
Palatine, Ill. — Total Integration Inc. this month will ship a plug-in that allows Adobe Photoshop to open and edit portions of large TIFF graphics files.

FASTedit/TIFF, priced at \$239, will preview and open any TIFF graphic.

Users can open the entire file or use a cross-hair tool to select a portion of the file to edit. When a file is saved, FASTedit automatically appends the edited area to the original TIFF file.

"Before we used [FASTedit/TIFF], it wasn't even possible for us to edit a 90-Mbyte file," said Alan McCollough, systems manager at A.T. Publishing Inc. of Anchorage, Alaska. "Now I can load just a 4-Mbyte portion of a file and easily edit it in Photoshop."

"It also reduces the twiddle-your-thumbs time we used to have wait-



FASTedit/TIFF from Total Integration allows Adobe Photoshop users to open an entire TIFF file or use a cross-hair tool to select a portion of the file to edit.

ing for large files to open," McCollough said.

An indicator in FASTedit/TIFF's 2.5-by-3.5-inch preview window shows the size of the image area the user has selected in megabytes. Users can adjust the size of a cropped area numerically as well as manually.

Total Integration last month shipped Version 3.1 of FASTedit/CT, its \$239 Photoshop plug-in

for opening and editing continuous-tone Scitex graphics files. The new version includes the file-size indicator and crop-box features in FASTedit/TIFF and improves preview resolution, the company said.

Upgrades to FASTedit/CT 3.1 are \$38.

Total Integration Inc. is at 155 E. Wood St., Palatine, Ill. 60067. Phone (708) 776-2377; fax (708) 776-2378. □

FreezeFrame graphics database snaps up Mac, Windows images

By Lisa Picarille

Monterey, Calif. — DeltaPoint Inc. is readying a Macintosh version of its FreezeFrame graphics-management system, recently released on Windows.

The \$89 program, which will make its debut at this week's Macworld Expo in San Francisco and ship in the first half of the year, is aimed at users who need to manage images and clip art as well as convert graphics files among multiple platforms.

FreezeFrame for the Macintosh will be almost identical to its Windows counterpart, the company said. Instead of an icon editor, however, the Mac software will feature a thumbnail manager, which simplifies image management by displaying thumbnail views of the files.

FreezeFrame will convert graphics among more than 50 file formats for Macintosh, Windows, DOS, OS/2 and Sun environments. Formats include Paint, TIFF, Encapsulated PostScript, PC Paint, Targa, PCX and BMP.

Users will be able to run conversions in the background and write scripts to perform batch conversions.

The Symbol Manager will let users store sounds, animation, images and QuickTime movies. The program will ship with about 500 color EPS files. Users can store objects in multiple symbol libraries. The program will sport search, sort and retrieval facilities.

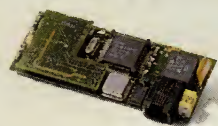
Double-clicking on any object in the symbol library will enlarge that object to its full size. Users also will be able to store objects as thumbnails that can then be dragged and dropped into other documents or applications that support the graphic's native file format.

FreezeFrame will compete with Aldus Corp.'s Fetch, a new \$295 browsing and cataloging database (see MacWEEK, Dec. 7, 1992).

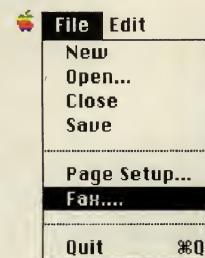
DeltaPoint Inc. is at 2 Harris Court, Suite B-1, Monterey, Calif. 94940. Phone (408) 648-4000 or (800) 367-4334; fax (408) 648-4020. □

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StrataVision update handles Illustrator files

3-D app supports alpha-channel effects

By Kirsten L. Parkinson

St. George, Utah — Strata Inc. recently shipped Version 2.6 of its StrataVision 3d rendering package.

New features of the \$995 3-D program include:

► **Enhanced import and export options.** StrataVision 3d users now can import native Adobe Illustrator files instead of having to convert them into bit-mapped images. The program also lets users save rendered images as Encapsulated PostScript files for export to page-layout applications such as QuarkXPress and Aldus PageMaker.

► **Alpha-channel support.** The background of a PICT file can be defined as transparent. This lets users layer images or wrap text around an image.

► **Bevel textures.** Users of Version 2.6 can apply different textures to the bevel as well as the face and sides of objects.

► **Faster screen redraw.** The



Artist Kyle Maxwell used the alpha-channel capability of StrataVision 3d to create this image of crayons. Maxwell also imported some of the images directly from Illustrator.

new version redraws models from 25 percent to 300 percent faster than its predecessor, depending on the complexity of the model and the view used. The greatest improvements in speed occur in the wireframe view, the company said.

"I've been using StrataVision 2.5 quite a bit, and in Version 2.6, the most noticeable thing is the redraw rate," said John Nyquist, a consultant designer for Synapse Design

Inc. of Des Plaines, Ill. "Working in modeling, especially with wireframes, [the rate has] increased dramatically; it seemed like it was supercharged."

Upgrades are \$39; users who bought Version 2.5 after Aug. 1 can upgrade free.

Strata Inc. is at 2 W. St. George Blvd., Suite 2100, St. George, Utah 84770. Phone (801) 628-5218; fax (801) 628-9756. □

PageMaker

From Page 62

multiple files, limited only by memory. It will offer tile and cascade capabilities as well as a list of all open publications. Users will be able to drag and drop text and graphics among open publications.

► **Integration.** PageMaker 5.0 will add filters for Eastman Kodak Co.'s Photo CD, DXF (Drawing Interchange File) and WordPerfect Graphics. Both versions will support OLE (Object Linking and Embedding), Microsoft Corp.'s inter-application communications scheme. They also will support the Panose font mapper, which identifies a publication's missing fonts, and the Twain application programming interface standard for direct scanning.

Users will be able to unlink embed-

ded files, such as graphics documents.

► **More Additions.** PageMaker 5.0 will come with 20 Aldus Additions, or add-on code modules, up from six in Version 4.0. New Additions will let users group objects, sort pages, create running headers and footers, adjust kerning, and track editing.

Some users noted that the upgrade increases the similarities between PageMaker and QuarkXPress, the rival publishing program from Denver-based Quark Inc. PageMaker 5.0 will match XPress in another way: Its price will increase by \$100, to \$895. Upgrades will be \$150, or free to users who bought Version 4.2 after Jan. 1.

Aldus Corp. is at 411 First Ave. S., Seattle, Wash. 98104-2871. Phone (206) 622-5500; fax (206) 343-4240. □

Authorware

From Page 62

port for QuickTime movies and MacroMind Director presentations. Users now can record sounds from within the program.

A Windows version of Authorware Pro 2.0, due next month, will open, edit and play back applications created in the Mac version. Educators can purchase either the Mac or the Win-

dows version for \$995. Upgrades are free to users who purchased either version of the program after Oct. 1 and \$695 to other registered users.

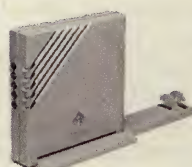
Previously sold directly by Macromedia, Authorware Pro now will be offered by value-added resellers.

Macromedia Inc. is at 600 Townsend St., San Francisco, Calif. 94103. Phone (415) 442-0200; fax (415) 442-0190. □

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Programs ease imposition burden

By Kirsten L. Parkinson

San Francisco — Publishers and service bureaus now have two new Mac applications for paginating and imposing large documents, such as books and manuals.

► **Island Imposition Publisher**, to ship this month from Island Graphics Corp. of

San Rafael, Calif., will let users arrange several pages of a document for printing onto a single piece of film or printing plate. It works with any PostScript-compatible output device.

Imposition Publisher will be available in two versions. The \$1,995 Island Imposition

Publisher Personal Professional will include input filters for QuarkXPress and Aldus PageMaker documents. The \$3,995 Island Imposition Publisher Studio Professional will come with 25 input filters, including filters for XPress, PageMaker, Ventura Software Inc.'s Ventura Publisher, Microsoft Word, and Scitex and Xyvision files.

Both versions will support up to 1,204 pages in 16-page signatures. Imposition Publisher will ship with 40 layout templates, and users

can define and save additional templates.

Island Graphics this month also will ship Island Trapper, its \$2,195 PostScript trapping application (see MacWEEK, Sept. 14, 1992).

► **ThumbPrint**, available now from Ambassador Software of Santa Clara, Calif., creates a signature layout sheet users can refer to when stripping in documents manually.

ThumbPrint is available in two configurations. The \$799 ThumbPrint Master supports up to 64-page signatures and two binding processes. The \$199 ThumbPrint QP supports up to eight-page signatures and two binding processes. Users of either version can purchase additional binding methods for \$99 each.

Ambassador also offers ThumbPrint Jr., a \$99 database for pagination information, which can be integrated into ThumbPrint Master or QP by the printer to produce the signature information.

Ambassador Software is at 3140 De la Cruz Blvd., Suite 200, Santa Clara, Calif. 95054-2406. Phone and fax (408) 980-0337.

Island Graphics Corp. is at 4000 Civic Center Drive, San Rafael, Calif. 94903-7413. Phone (415) 491-1000 or (800) 255-4499; fax (415) 491-0402. □

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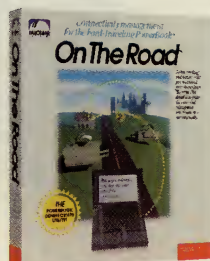
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Wayzata spinning out new graphics CD-ROMs

By Kirsten L. Parkinson

Grand Rapids, Minn. — Wayzata Technology Inc. has rolled out a slew of graphics CD-ROMs, including photo, art and font packages.

► **Photo Pro volumes 1 and 2** each contain more than 100 stock photos stored as 24-bit-color TIFF files. Volume 1, available now, contains images of nature, such as mountains, water, rocks and plants; Volume 2, due next month, includes photos of people in action. The discs are \$129 each.

► **EPS Pro Volume 2**, available for \$199, comprises more than 600 black-and-white Encapsulated PostScript images of holidays, borders, maps, flags, symbols and medicine.

► **Gallery of Dreams**, priced at \$99, includes 500 surreal 24-bit-color TIFF images that can be used as backgrounds or textures in multimedia presentations.

► **Font Pro volumes 1 and 2** each contain 125 unlocked typefaces in both TrueType and Type 1 formats. Fonts include Minstrel, Kneebles and Xaltid. Each CD-ROM is \$99.

Wayzata also released Laser Printer Companion, a \$49 CD-ROM that offers tips, hints and articles on laser printers and desktop publishing.

Wayzata Technology Inc. is at P.O. Box 807, Grand Rapids, Minn. 55744. Phone (218) 326-0597 or (800) 735-7321; fax (218) 326-0598. □



Wayzata's **Gallery of Dreams** CD-ROM includes 24-bit-color TIFF images for use in multimedia presentations.

How Butterflies Transform

The butterfly passes through several stages in its glorious transformation from egg to the completed creature that we all visualize as the butterfly. The adult female lays between one hundred and several thousand eggs throughout her lifetime each with the potential of becoming an adult butterfly itself.

Each egg, so tiny that it can only be seen by the human eye with the help of a microscope, is laid on or near a plant on which the newly hatched grub will be able to feed. These eggs are often green or yellow, but can also be found in shades of blue or red, each with a shell-like design covering it.

Usually in the spring or summer a tiny caterpillar, or grub, will hatch from the egg. This wormlike creature almost immediately begins to feed as it will consume the majority if not all of its nutrients during this phase of its life.

The caterpillar will continue to eat until it has eaten so much that its skin can no longer contain the newly acquired mass. The skin then bursts and the caterpillar will shed it in order to have it replaced by a newer and larger one. This process continues for weeks as the caterpillar increases in size, several times its original mass.

Often during the time of fall, the caterpillar will then either spin a silken pad from which it suspends itself by its hind legs or it will fasten its body upright by silken threads to a twig creating a chrysalis or exposed pupa. Usually after spending the winter months dormant, the final stage of transformation will take place.

The shell of the chrysalis is broken open and the creature that emerges is barely recognizable as the butterfly that it will become. Its wings are crumpled and kept close to its moist limp body. It will remain clinging to the cocoon or a nearby branch as its form gradually begins to become dry and firm.

It moves its wings slowly at first with little strength but as they dry it is soon ready to take flight. The creature that ascends into the air has been through its final stage of development and is now the completed butterfly. This butterfly is now called the imago, or perfect insect.

How Butterflies Transform

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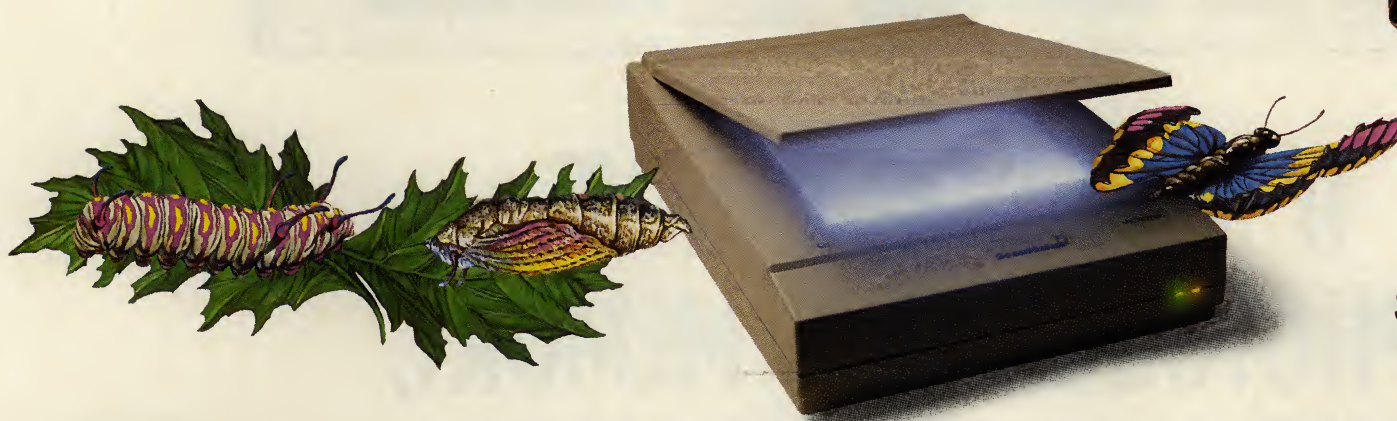
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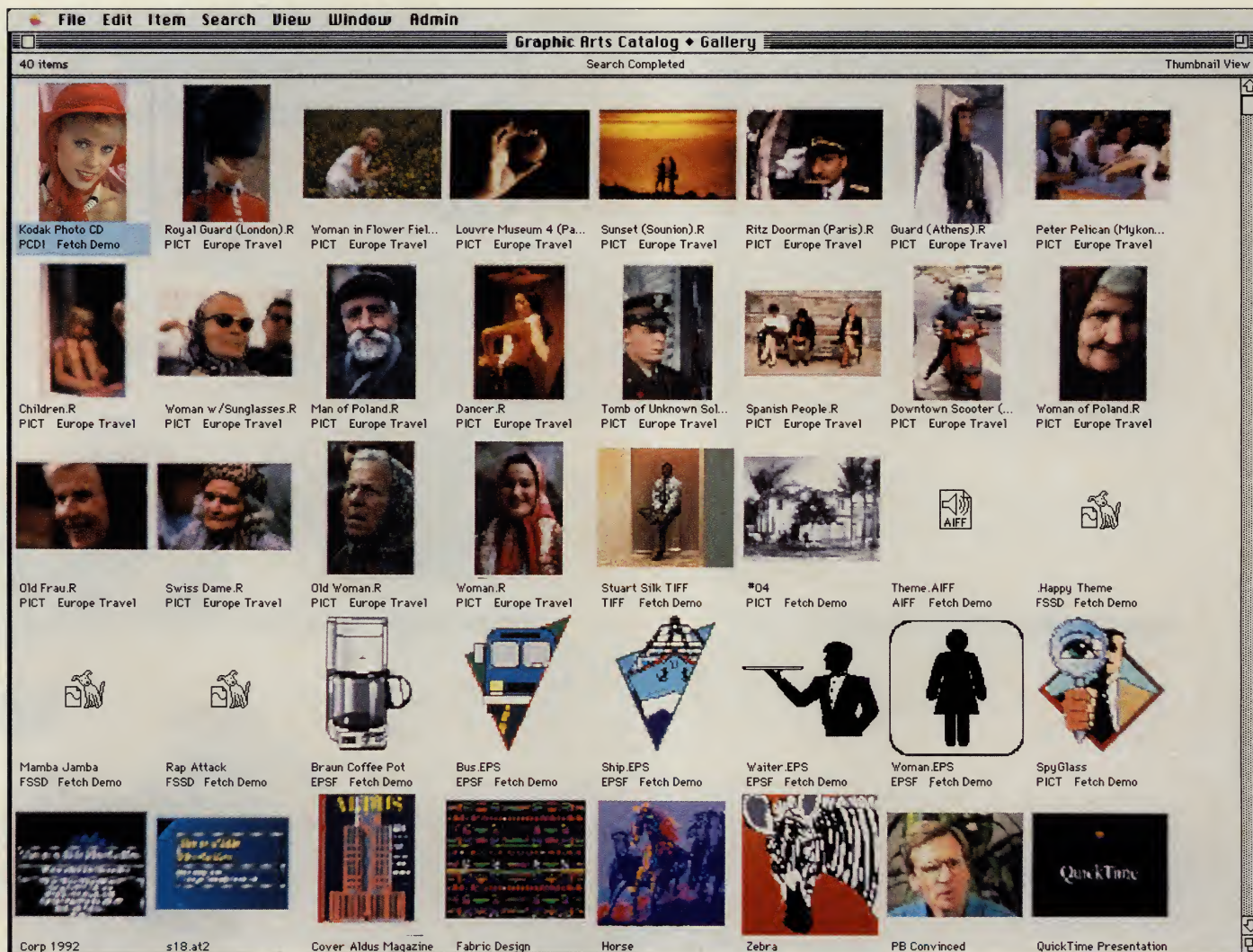
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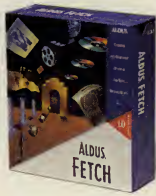
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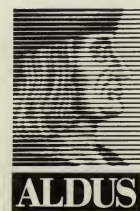
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News Analysis

Catalog producers opt for increased automation

By Mitzi Waltz

Many publishers use the Mac for its established image-editing and desktop publishing capabilities. The specialized needs of catalog publishers — including tools to handle fluid pricing, customer and product information as well as large numbers of associated photos — are helping inspire new publishing applications that will link databases and page-assembly programs dynamically.

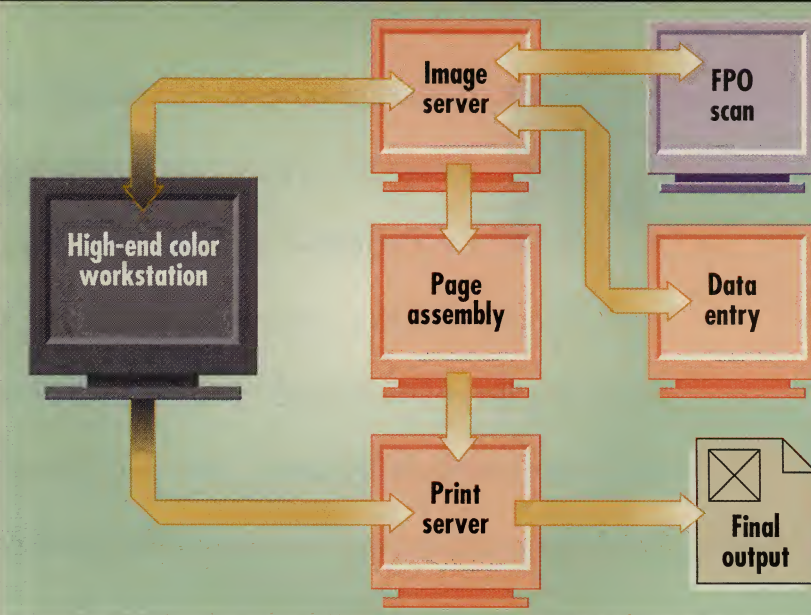
Application communication.

The two most important tools for automating catalog production are image-archiving products and links between databases and page-layout programs, according to Tim Celeski, a free-lance production-system designer and principal of Tim Celeski Studios of Seattle. "[The data for] my dream catalog sits on a Photo CD and links directly into [Aldus] PageMaker through an [Aldus] Fetch database," Celeski said.

Fetch is a multi-user browsing and cataloging database for graphics, sounds, video and text files (see MacWEEK, Dec. 7, 1991). Fetch employs thumbnails, full-size previews, descriptions and keywords to help users organize digital media. Users can search Fetch catalogs by name or type of file, host volume, or keyword. "The potential of Fetch, particularly with the upcoming version of PageMaker, is significant," Celeski said.

The new version of PageMaker reportedly will allow users to take advantage of Fetch's Copy File Resource function. Users can select multiple thumbnails in Fetch, use the Copy File Resource command, then paste that information in PageMaker. The file names will appear in a new palette in PageMaker, from which users can drag images into a document with links intact, as if the image had been acquired using PageMaker's Place command.

Future of servers and database links in publishing



GARY JAEGER

Another capability of Fetch that could help catalog publishers is its use of the "pnot" file resource, which lets users attach up to 32,000 characters of descriptive textual information to a file. Fetch currently uses this information for its description- and keyword-based searches, but as developers make page-assembly programs "pnot-aware," users should be able to import a photo with attached product information.

Increased cooperation.

While Celeski said he envisions CD

archives, databases and layouts in a seamless, automatic system, the reality at most catalog houses is a bit more mundane. For many publishers, the transition from traditional publishing methods to Mac-based desktop publishing is the first step in a long-range plan that includes photo archiving and database integration.

At upscale garden supply vendor Smith & Hawken Ltd. of Mill Valley, Calif., computer production manager Phoebe Bixler said she is

See Catalogs, Page 72

Desktop publishers may soon be able to place low-resolution FPO photos with attached text onto pages. Any text changes will be reflected automatically on assembled pages. At final output, the print server will substitute FPO images with high-resolution images.

Mac keeps L.L. Bean catalogs in step

Like its famous outdoor wear, L.L. Bean Inc.'s new Mac-based electronic publishing system is conservative yet state-of-the-art. Linking the Freeport, Maine, retailer's entire creative staff via 60 Mac workstations, the setup eventually will combine QuarkXPress with several other software packages to make the production process faster and easier and increase in-house control of the final output.

Replacing Unix. Until recently, Bean produced its catalogs with a Unix-based Camax typesetting and layout system, with copywriting stations running XyWrite software, and using mechanical methods, said senior LAN administrator Suzanne Brink. Chief among the Camax system's many drawbacks was its inability to handle color. "We went to the Mac for flexibility and because it was not a closed, hierarchical architecture," Brink said. In addition, she said, an integrated system will let the entire department work together more closely.

The ongoing transition process has had its share of bugs, she said, adding that she'll be glad when it's all in place and running smoothly. "It's difficult [to switch], especially in a department where the work never slows down," she said. "We're going to try to have a short transition time."

Gary Poysyck, director of research and

development at system vendor Lanman Systems Group Inc. of Tampa, Fla., which installed Bean's Mac system, said, "We're very conservative in our approach to configuring systems; we don't believe in giving our clients bleeding-edge sites."

The network was designed with room for growth. For example, although Bean's installation is not huge, it includes four Quadra servers. "They're loaded with a lot of RAM in anticipation of server software," Poysyck said. "We have image servers, scanning servers and print servers just to handle the movement of 12,000 FPO (for position only) images across the network at any given time." The print server uses Compumation Inc.'s Print Central software to route jobs to an open imagesetter or laser printer.

Images are everything. When creating several photo-laden catalogs yearly, image archiving and retrieval are essential for keeping things organized and saving time. LSG's Ellen Beharian said that Bean is interested in using Fetch, Aldus Corp.'s multi-user browsing and cataloging database, when it becomes available in February. Fetch should help Bean production staffers find and retrieve graphics files, FPOs and text. LSG is currently testing it in beta form at its facility with some Bean files, she said.

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A heavy, warm jacket made of wool. It is available in a variety of colors and sizes. Price: \$149.95.

Trail Model Vest (For Men and Women)
A light, warm vest made of Thinsulate insulation. It is available in a variety of colors and sizes. Price: \$49.95.

Pages and files will be backed up regularly onto digital audio tapes with Retrospect software from Dantz Development Corp. of Berkeley, Calif.

Future dreams. Although no decision has been made, LSG and Bean are interested in implementing Quark Inc.'s CopyDesk and Dispatch. Dispatch is a collection of utility programs that will provide query and routing capabilities to any software within the system. Quark is pushing vendors to add built-in hooks for Dispatch to their applications. Sources close to Adobe Systems Inc. said that Photoshop and Illustrator are likely to be among the first to do so.

LSG's Poysyck said Bean needs to track the movement of photographic elements and illustrations, and, most importantly, it needs to keep a handle on editorial elements to facilitate copyfitting. "We may be tracking 10,000 to 20,000 active blocks of copy," Poysyck said. "There may be eight blocks of copy associated with a product, such as a pair of Bean boots." The company eventually will need Dispatch or another similar product to automate this job, he said.

Bean's computer system is a work in progress, Beharian said, adding that its open structure should allow the company to implement in-house color and other innovations. — By Mitzi Waltz

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Catalogs

From Page 70

fighting to bring her company's Mac system into the future. It doesn't have enough capacity for serious databasing, she said, and it is difficult to link Macs with the corporate mainframe.

Bixler said an archiving system for FPO (for position only) images is priority No. 1. "The department has been looking into that for nearly one year, but it's hard to convince management to buy anything; in our company, we're working on a close budget," she said. The company already has purchased Claris Corp.'s FileMaker Pro database software for another corporate project, she said, so it may end up being her choice by default.

Bixler also said she is hoping for a QuarkXPress upgrade that includes more-powerful document-management features. "We're working with 30 to 54 spreads per catalog; I wish I could make a change in one and have it reflected in all of them," she said.

Not every catalog producer is looking for high-end color output. At Datalex Corp. of Amherst, N.H., President Keith Thompson uses a Quadra 700 and FrameMaker page-layout software from Frame Technology Corp. of San Jose, Calif., for a client that publishes long, technical, plain catalogs. Thompson said he chose FrameMaker

including name, vendor, product category and the FPO scan, is entered into a multi-user database created in Blyth Software Inc.'s Omnis 7. Production staff create layouts in PageMaker, open the database to locate products by name or by vendor, copy the information, and paste it into the PageMaker document.

Stephanie Young, senior desktop publisher for Mac's Place, believes that the complexity of the design in the Mac's Place catalog prohibits the use of current database publishing tools. She said that having to repour whole pages or sections to accommodate last-minute changes would cost time rather than save it.

Frequent fliers. Avon Products Inc.'s New York headquarters creates a new 120-page Avon cosmetics catalog every two weeks. To increase efficiency, Avon's production staff recently switched from mechanical methods to Macs. The new system was designed by The Blue Chip Group of New York to link Mac workstations with Scitex proofing and printing equipment.

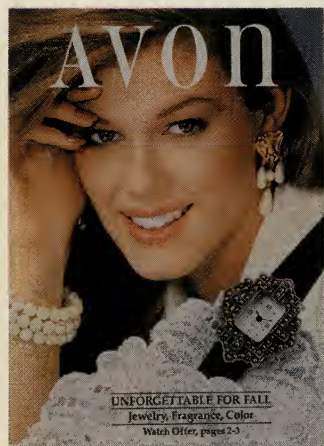
Avon uses 91 Macs (Iicis and Quadras) with 20 Mbytes of RAM each; Adobe Illustrator and Photoshop are the primary software tools for graphics and images; and the company uses QuarkXPress for layout tasks.

"We don't have database links yet," said Blue Chip consultant Michael Antebi. "A lot of the things we want don't exist, especially since [our needs require] 25 to 100 people be working from one database." Antebi said he believes more-robust database software with faster multi-user capabilities will be available soon.

Avon's text and images are currently stored in file folders on four Quadra 900 servers. "We're in the process of bidding for a larger back end that will store text and have strong image-handling capabilities," said Ed Horgan, Avon manager of graphic systems. "At this point, storing files in folders still works, but sometimes we can't remember where a picture is or when it last ran." When that happens Horgan said he takes the old-fashioned route: a trip to Avon's extensive library of photographic prints.

Avon's print vendors handle all scanning, Horgan said. Avon is building up a library of low-resolution FPOs on optical disks attached to its Scitex color-retouching system, where they soon will be available to its art directors.

The Mac-based system was installed in stages, starting with a small system for debugging and moving up to a full-scale system with Scitex links. Blue Chip's Antebi said the final system also will include links to a database of stock numbers and pricing information.



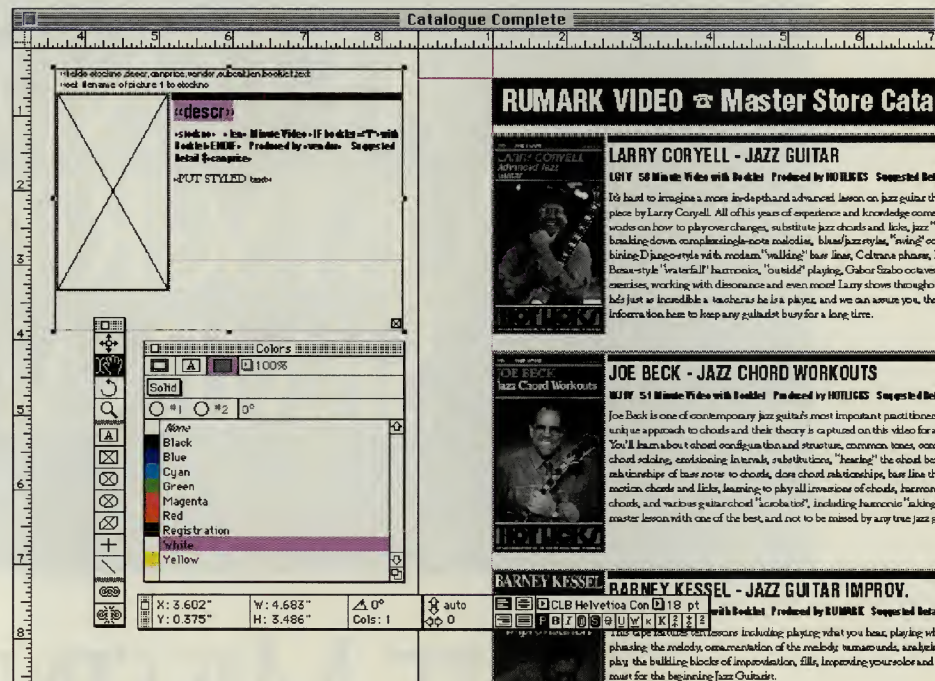
for its capability to handle long documents and its excellent indexing and table-of-contents tools.

"FrameMaker works very well with repetitive catalogs, such as parts catalogs — the kind that lend themselves well to templates," he said. On the other hand, he said, some of its capabilities, such as color manipulation and import-export filters still are not up to par.

Clipboard link. Databases and layout programs aren't linked directly at Mac's Place, but bringing them closer together is what enables the Redmond, Wash., company to churn out its quarterly 72-page "magalogs," which include articles, sales pitches and its more-frequent advertising supplements for Mac magazines.

The Mac's Place process is simple. A photographer shoots each product as it's added to the catalog lineup. The staff scans in a black-and-white Polaroid taken at the shoot for use as an FPO image, while Color Service Inc. of Seattle scans and separates the color photo.

Information on the new product,



Simple solutions. There are two tools available that facilitate the import of data into page-assembly programs. DataShaper 1.2 is an Aldus Addition from Digital Composition Systems Inc. of Phoenix that lets you import tab- or comma-delimited text from almost all Mac, IBM PC or compatible-based, and mainframe databases via import and export filters that users install in PageMaker's menu bar. Users set formatting options for incoming data that assign it the proper specifications when flowed into a template. It also can place PICT or TIFF graphics in a PageMaker document.

DataShaper comes with Zip Bars, a bar-code-generation application for adding ZIP-code labels to mass mailings, and a variety of PageMaker templates. It also provides automatic indexing, a feature that should be of interest to catalog producers.

Concord, Ontario-based Rumark Video uses Xdata 2.0, a QuarkXTension from Em Software Inc. of Westbrook, Conn., to help produce catalogs for its music-instruction videotapes. Xdata allows users to create template files in QuarkXPress that define parameters for the import of text and images from a database.

"Now that I've gotten [Xdata] set up, it's going to be a pleasure doing catalogs and 'New Releases' sheets," said Rumark Vice President Mark Helman. "All I have to do is enter information and scan in pictures as we add products, then I press a button in Quark. The database sorts the information the way I want it, and the [XPress] template prints it the way I want it."

Helman uses a FoxBASE Pro database from Microsoft Corp. to hold everything from scanned product photos to customer information and product numbers. Using Xdata, he said, he can pull this information into a variety of formats, including

price lists, order forms, complete catalogs with pictures and even customized catalogs of, say, all the tuba videos he has in stock.

"Ideally, you want to use that database information for everything, and Xdata lets me do that," Helman said. "If a price changes or something goes in or out of stock, you can enter it in one place and draw from it as needed with the XTension."

Learning to use Xdata does require some patience, Helman said. "You really do have to program the template," he said. His templates include a space for images, for example, behind which is an If/Then statement: If there's a picture in the database that matches this product number, then put it here; if there is no picture, use a template without a picture box.

Down the road. In six months, sources said, technology will be available that could greatly benefit Mac-based catalog publishers. With this technology in place, a publishing system might include Apple's image server using Fetch as a front end, making low-resolution FPOs and high-resolution final photos, with caption information attached, available over a network.

As developers update programs to take advantage of these resources, users can anticipate a wealth of dynamically linked data, including product photos and descriptions and customer lists, that will help automate catalog production and provide the opportunity to produce niche marketing publications with minimal extra costs. □

Rumark Video used Em Software's Xdata QuarkXTension to design its music-instruction videotape catalogs. The template (left) sets the parameters for the page (right), including text style and photo placement, for data fields imported from a FoxBASE Pro database.





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too light"*



4:30
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Publish, August 1992



4:31
PM

*"Too blue,
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color filter"*



4:33
PM

*"No color,
pump up the
saturation"*



4:42
PM

*"Perfect.
Great proof.
Print it."*



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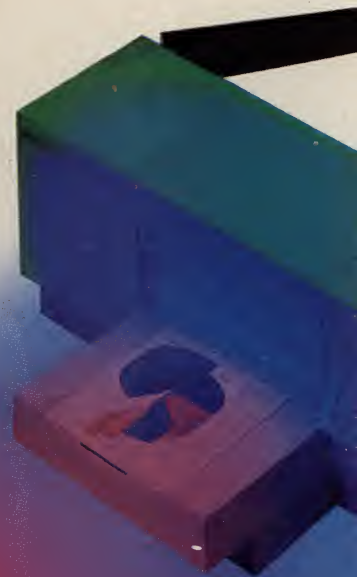


Electronics for Imaging, Inc.

Cachet system requirements: Mac LC with math coprocessor,
Mac II or Quadra family. Hard disk, 5MB RAM (8MB
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larger. System 6.05 or later. This ad was produced using Cachet.

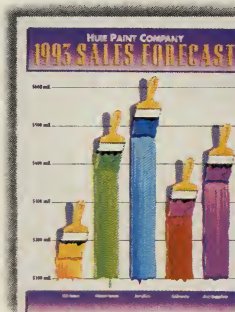


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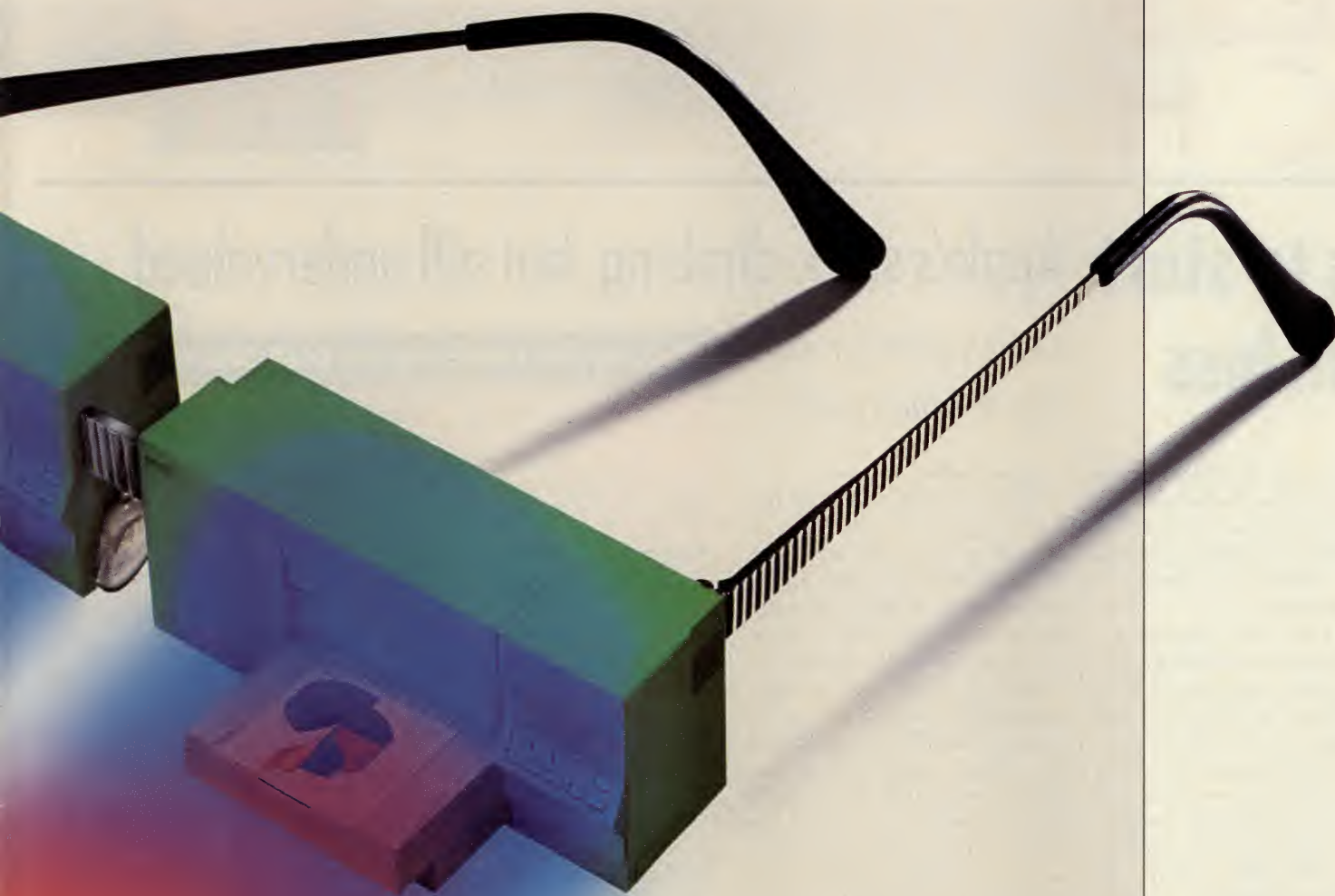


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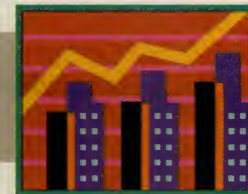
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BUSINESS WATCH

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Radius expects to start fiscal 1993 with loss

Monitor maker puts blame on delays

By Eric Lach

San Jose, Calif. — Citing delays in the production of a new monitor as well as Apple's slow delivery of new CPUs, Radius Inc. last month announced that weaker-than-anticipated sales will cause it to post an operating loss for the current quarter.

For its first fiscal 1993 quarter ending Jan. 3, the display and accelerator maker now expects net revenues of about \$35.6 million, down slightly from the \$36.8 million posted for the same quarter last year.

Radius' announcement marks the second quarter in a row the compa-

ny has revised in midquarter its expectations about its performance. The move came just six days after two Wall Street analysts expressed a lack of confidence in the company's revenue estimates.

Mike Boich, the company co-founder who reassumed the duties of CEO after the resignation of Barry James Folsom in September, said that a supply problem with the company's new PrecisionColor Pivot monitor was one reason for soft sales. Last quarter the company slashed the price on its lower-performance color Pivot monitor, the Pivot LE, in anticipation of its discontinuation. However, inventory for the old monitor ran out before production of the new monitor could get up to full speed, Boich said.

See Radius, Page 78

Apple's stock climbing, but still undervalued

Price/earnings ratio lags behind rivals'

By Lisa Picarille

Cupertino, Calif. — For the first time in Apple's 15-year history, its earnings per share price has exceeded that of IBM Corp., but Apple's shares continue to trade at an unusually low price relative to earnings, according to Wall Street analysts.

Apple, with one-eighth the revenues of \$56 billion IBM, saw its stock overtake IBM's in the wake of Big Blue's announcement last month that it would lay off 25,000 more workers — on top of the 40,000 job cuts announced earlier last year. The news sent IBM's stock tumbling more than \$11 per share to an 11-year low of \$51.88, while Apple's stock hovered around \$60.

Apple now also tops IBM when the two stocks are compared in terms of price/earnings (P/E) ratio

How Apple stacks up on Wall Street

	REVENUES (PAST 12 MONTHS)	STOCK PRICE (PER SHARE)	MARKET VALUATION (OUTSTANDING SHARES)
Apple	\$7 billion	\$58.25	\$7 billion
Compaq	\$3.55 billion	\$45.50	\$3.79 billion
Dell	\$1.67 billion	\$46	\$1.76 billion
IBM	\$67 billion	\$51.88	\$29.3 billion
Microsoft	\$2.99 billion	\$90	\$24.7 billion

Source: Dow Jones & Co. Inc.

— an indicator closely watched by investment professionals. Apple's P/E ratio last month was 13.5, compared with IBM's 10.8. But Apple's stock was undervalued compared with other leading companies selling Intel-based PCs. Both Compaq Computer Corp. and Dell Computer Corp. had P/E ratios of 20.2; Microsoft Corp.'s was 34.5.

At an industry conference last

month, Apple CEO John Sculley said Apple's stock price "suffers because we're lumped in with all the other PC companies."

Most analysts agree Apple holds a unique position in the industry, selling both software and systems, and it is difficult to place a value on its stock.

"They have good equity and See Stocks, Page 78

FTC closing in on antitrust action against Microsoft

By Jon Swartz

Washington — After months of rumors and vague press rumblings surrounding a Federal Trade Commission investigation into Microsoft Corp.'s business practices, the commission's staff reportedly is ready to urge antitrust action against the software giant.

A newsletter based here last month reported that staff lawyers in the FTC's Bureau of Competition are seeking authorization from the five FTC commissioners to seek a preliminary injunction against Microsoft.

According to the publication FTC:Watch, the FTC is seeking to modify Microsoft's method of licensing its MS-DOS operating system software to computer manufacturers, alleging that current practices are calculated to discourage the use of competing operating systems, such as IBM Corp.'s OS/2 and Novell Inc.'s DR DOS.

The publication said that FTC staffers specifically want to end Microsoft's practice of requiring some hardware manufacturers that license MS-DOS to pay a royalty on every computer they sell — not just those that have DOS installed when they leave the factory.

FTC spokeswoman Bonnie Janson would neither confirm nor deny the reports in the FTC:Watch article. Microsoft officials also declined comment.

However, Art Amolsch, editor of FTC:Watch, said sources within the FTC told him that a 250-page

report asking permission to seek a court-ordered injunction has been sent to commissioners.

Amolsch called the action a "major step" toward a showdown between Microsoft and the FTC in court. But commissioners must

See Microsoft, Page 78

DCA acquires network rival Avatar

By Mitch Ratcliffe

Alpharetta, Ga. — Digital Communications Associates Inc. has acquired its leading competitor in the Mac-to-IBM connectivity market, Avatar Technologies Corp.

DCA, based here, last month announced it has agreed to buy Hopkinton, Mass.-based Avatar for \$8 million.

The total payment to Avatar could increase, depending on the performance of the combined DCA/Avatar product line over the next three years. Privately held Avatar reported \$17 million in fiscal 1992 sales.

Avatar last year acquired Santa Clara, Calif.-based Tri-Data Systems Inc. to become the largest Mac-to-mainframe developer.

DCA, which will integrate Avatar's MacMainFrame, MainPrint and NetWay series into its MacIRMA mainframe connectivity line, reported \$19.7 million in earnings on sales of \$209.4 million in 1992.

The company said it will pare Avatar's staff and close Avatar's offices in Hopkinton and Santa Clara.

"DCA is trying to become a full-line vendor of mainframe connectivity products," said Eric Zimits, a securities analyst at Woodruff & Co. in Dallas. "Between themselves and Avatar, they probably [have] 90 percent of the Mac market. By acquiring Avatar, DCA becomes virtually the only vendor providing these solutions." □

StockWatch

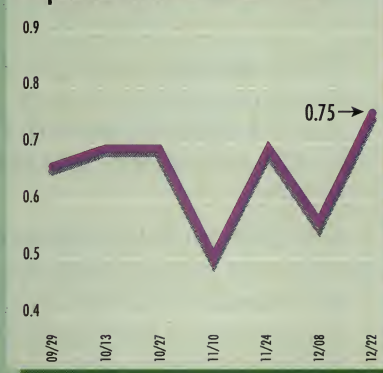
	12.22.92 CLOSE	WEEKLY % CHANGE
Apple	60.63	4.30
Dow Jones average	3321.10	-0.03
SOFTWARE DEVELOPERS		
Adobe	31.13	-8.46
Aldus	12.50	-15.25
Caere	19.25	-6.10
CE Software	3.75	-9.09
Microsoft	87.75	-5.14
Novell	26.75	-15.08
Symantec	12.50	-12.28
PERIPHERALS VENDORS		
CMS	2.88	4.55
HP	66.25	2.71
Mass Micro	0.75	33.21
QMS	12.13	5.43
Radius	5.00	-2.44
RasterOps	7.38	-11.94
Sigma	7.00	5.66
SuperMac	17.50	0.72
STORAGE		
Conner	19.75	-6.51
Maxtor	13.13	-29.53
Quantum	15.25	-10.29
Seagate	18.50	-15.43
SyQuest	22.75	-15.74
INDUSTRY INDICATORS		
DEC	31.13	-8.79
IBM	51.88	-20.65
Motorola	103.00	-1.90
Sun	31.25	-7.41
Dow Jones	3321.10	-0.03

Compiled by Nordby International Inc.

In an otherwise dismal time for personal computer stocks, Mass Microsystems Inc. had a banner week. The ailing Sunnyvale, Calif.-based disk drive maker, which was acquired by San Jose,



Acquisition boosts Mass Micro stock



Calif.-based peripherals company Ramtek Corp. in a stock swap worth \$4.5 million last month, saw its price per share jump 33 percent to close at 75 cents a share (see story, Page 78).

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Guest editorial by Douglas Kass

Apple's channel conflict

Despite its progressive image, Apple repeatedly has been dragged kicking and screaming into the late 20th century when it comes to handling its resellers. And 1992 was no different.

For example, using distributors to sell products to small value-added resellers (VARs) had been in vogue for nearly two years before Apple finally decided to join in last year. And expanding distribution outlets to include consumer channels had been refined to a science before Apple bought in on the concept last year.

Granted, to develop, implement and manage dealer programs is tricky in its own right. There are thousands of variables and what-ifs to consider. Every company is entitled to an Achilles heel. In Apple's case, dealer relations are its soft spot.

It's not unusual to mention Apple and contentious dealer relations in the same sentence. But 1992 was particularly puzzling. With competitive pressures at a near breaking point, what dealers needed most from Apple was consistency — as in, who sells what to whom.

For Apple to get its channels right, it isn't simply a question of segmenting dealers along the lines of who provides value and who doesn't. The problem with Apple's policies is that they appear whimsical and opportunistic. To wit:

- ▶ Apple long ago should have told its education resellers that they were no longer the top dog. Instead, the company proceeded to slash its number of these resellers from 400 to 100 and reapportion a significant chunk of school sales to distributors, telemarketers and alternate channels.

- ▶ Apple long ago should have

learned from frustrated dealers about the delicate balance between user demand and its manufacturing capacity. Instead, now it has a \$1 billion backlog in product orders.

- ▶ By this time Apple's VAR program should be as organized and coherent as similar programs from rivals Hewlett-Packard Co., Dell Computer Corp. and IBM Corp.

What Apple's traditional dealers faced last year, as they have in previous years, was channel conflict with a capital "C" — a mixed bag of severe shortages across the Mac product line, Apple's about-face on selling through mail order, and a new company program encouraging employees of large corporate accounts to bypass dealers and buy products directly from the computer maker.

Last year Apple essentially deprived its dealers of some of the hottest products on today's market during the most critical time of the year. It spent millions of dollars to create demand for products it couldn't ship, as Apple's greatest year of product innovation came to a screeching halt.

The U.S. distribution channel has undergone profound changes in the past year, and there are more alterations to come. In today's difficult market, specialization is vital to dealers' success. More important, however, is that manufacturers present a clear, concise and reasonable picture to dealers and stick with it.

But Apple's presentation in 1992 was fuzzy, and it remains unclear whether the computer maker can post strong sales after belatedly overhauling its reseller channel.

If it doesn't, Apple has only itself to blame.



Douglas Kass is president of The Viewpoint Group, an Aptos, Calif.-based market research firm.

Ramtek acquires Mass Micro in stock swap

No layoffs expected in \$4.5 million deal

By Ian G. Jacobs

San Jose, Calif. — Ramtek Corp., an OEM manufacturer of imaging and display products, last month announced it has signed a definitive agreement to acquire struggling Mass Microsystems Inc. in a stock swap worth about \$4.5 million.

Under the deal, which is expected to be completed in March, Ramtek

will issue 6 million shares of its stock in exchange for all outstanding shares of the Sunnyvale, Calif.-based peripherals vendor. No layoffs are expected at either company.

Carl Pompei, former chairman and CEO of Mass Micro, will become Ramtek CEO. Bill Finley will retain his position as Ramtek president.

In a related announcement, Mass Micro said its president, Adel El-Shimi, has resigned.

Mass Micro lost \$407,000 on sales of \$5.8 million for its third quarter ended Sept. 30.

Ramtek, which emerged from Chapter 11 bankruptcy protection three years ago, lost \$2.1 million in the fiscal year ended June 30, 1992. Sales were \$11.4 million, down 31 percent from the previous year.

Eric Herzog, director for marketing at Mass Micro, said the agreement will provide cash to help roll out more than five new product lines over the next several months. □

Novell has good, profitable '92

Provo, Utah — Novell Inc. last month reported stellar sales, profits and growth for its fiscal 1992 year.

The networking giant, based here, said annual sales rose 46 percent to \$933 million, compared with \$640 million in the same period a year ago. Profits were \$249 million, up 53 percent from \$162 million earned last year.

Sales for the fourth quarter, which ended Oct. 31, were \$260 million, up 39 percent from \$187 million in the same quarter a year ago.

Profits for the quarter increased 37 percent to \$70 million, compared with \$51 million in the year-ago quarter.

In a separate announcement, Novell and AT&T Co. said they have signed a letter of intent for Novell to buy Unix Systems Laboratories, an AT&T subsidiary that provides Unix software and services, in a stock swap worth an estimated \$350 million. □

Sun links two networking companies

Mountain View, Calif. — Sun Microsystems Inc. has announced it will merge its two networking divisions — Sitka Corp. and SunSelect — into a single unit called SunSelect.

The new unit integrates SunSelect's open, client-server networking and emulation-product families with peer-to-peer and mobile networking product lines from Sitka.

The worldwide operations of the combined business will be headquartered in Chelmsford, Mass., with additional offices in Alameda, Calif., where Sitka is based; Bagshot, England; and Tokyo.

Sun acquired Sitka in 1987, when it was known as TOPS Inc. It said Sitka products will continue to be sold and supported through Sitka channels. □

Radius

From Page 76

"As a result of our promotion last quarter, the LE became the volume member of the color Pivot family," he said. "We blew the inventory of that one out, and we are still ramping up the new one. It hasn't ramped up as quickly as possible, and there are a few million dollars involved in that transition."

In addition, Boich said Apple's problems delivering in volume its newest systems has put a chill on sales of Radius' graphics peripherals.

Last quarter, the company blamed its poor sales performance on customers who were holding off their buying decisions on peripherals until after Apple's fall product introductions.

Some observers have said Radius' attempts to blame Apple for its poor sales don't hold water, citing SuperMac Technology's record revenues last quarter under the same market

conditions, although some rivals claim SuperMac won't match that performance in its current quarter. Meanwhile, RasterOps Corp. also had a bad time last quarter, reporting a \$4.3 million loss. And industry sources said RasterOps' current quarter may see more red ink.

Despite the company's recent problems, Boich said Radius has a good long-term prospect for growth.

The company finished its fiscal year with \$160 million in revenues as compared with \$118 million the previous year; earnings were 50 cents per share, or \$7.1 million. In addition, Boich said Radius has about \$28 million in cash in the bank.

"We are into a couple of disappointing quarters at the moment, but our recent long-term financial performance has been good," Boich said. "We are well-capitalized, and we are pursuing a strategy that we think is going to straighten things out for us." □

Microsoft

From Page 76

approve the action, and it is not clear whether the FTC would take weeks or months to move ahead.

Investigators reportedly are preparing a wide range of recommendations on how to proceed against Microsoft, including splitting the company into pieces, erecting a "Chinese Wall" between divisions, or altering the way its application and system software is

sold to computer makers.

A change could hurt Microsoft only if manufacturers started shipping other operating systems — specifically OS/2 and DR DOS — in greater numbers. But analysts said there isn't a big demand for either system.

Meanwhile, industry sources said Novell, Borland International Inc. and WordPerfect Corp. are considering independent antitrust actions against Microsoft. □

Stocks

From Page 76

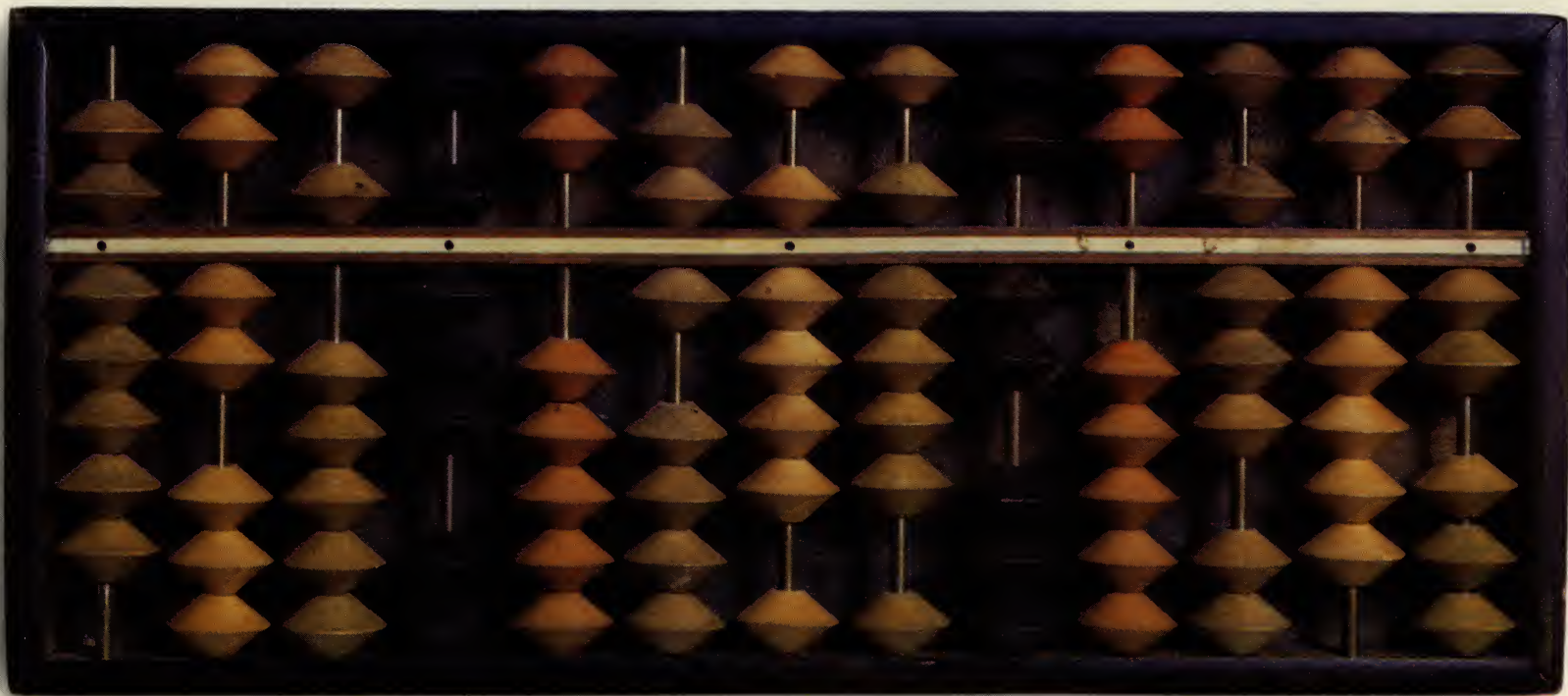
good cash flow, but they are not Microsoft," said David Wu, a financial analyst at S.G. Warburg in New York. He said he doesn't think Apple's stock is undervalued. "When Apple's stock price exceeds Microsoft's, that will be a victory."

Microsoft, with annual sales of \$2 billion, now is trading at about \$90 per share, giving the Redmond, Wash., company a market valuation of \$24 billion. Apple's market valuation is \$7 billion, about the same as its sales total.

Sculley, however, last month offered a word of hope to Apple shareholders. "We are three years through our transformation to a systems company," he said. "The fifth year will be the reason why our shareholder value should be better."

"It's discouraging, but not much different from five years ago. But if you look inside, we are a very different company." □

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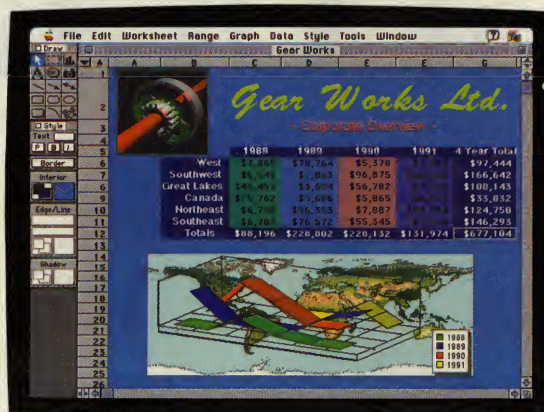
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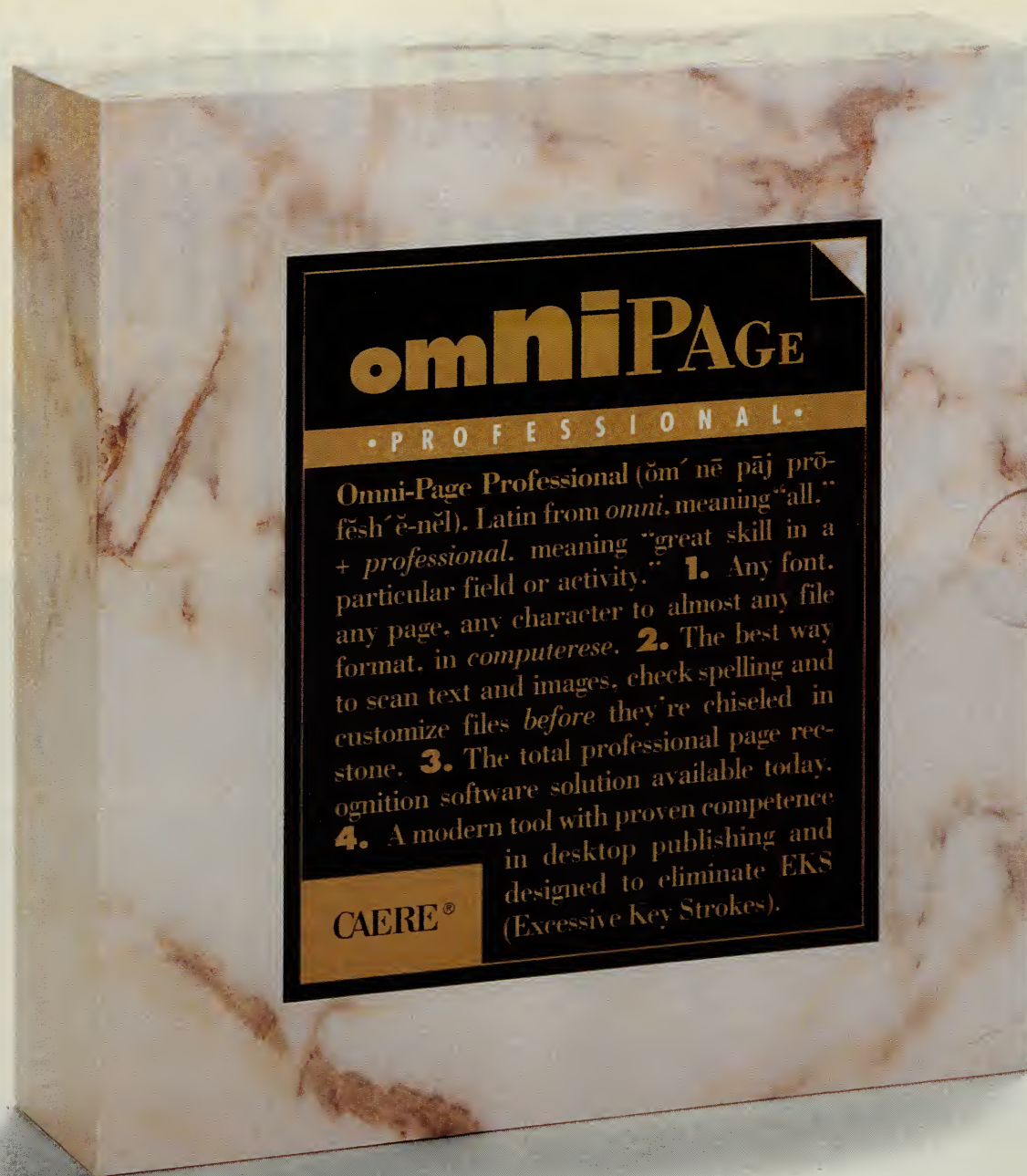
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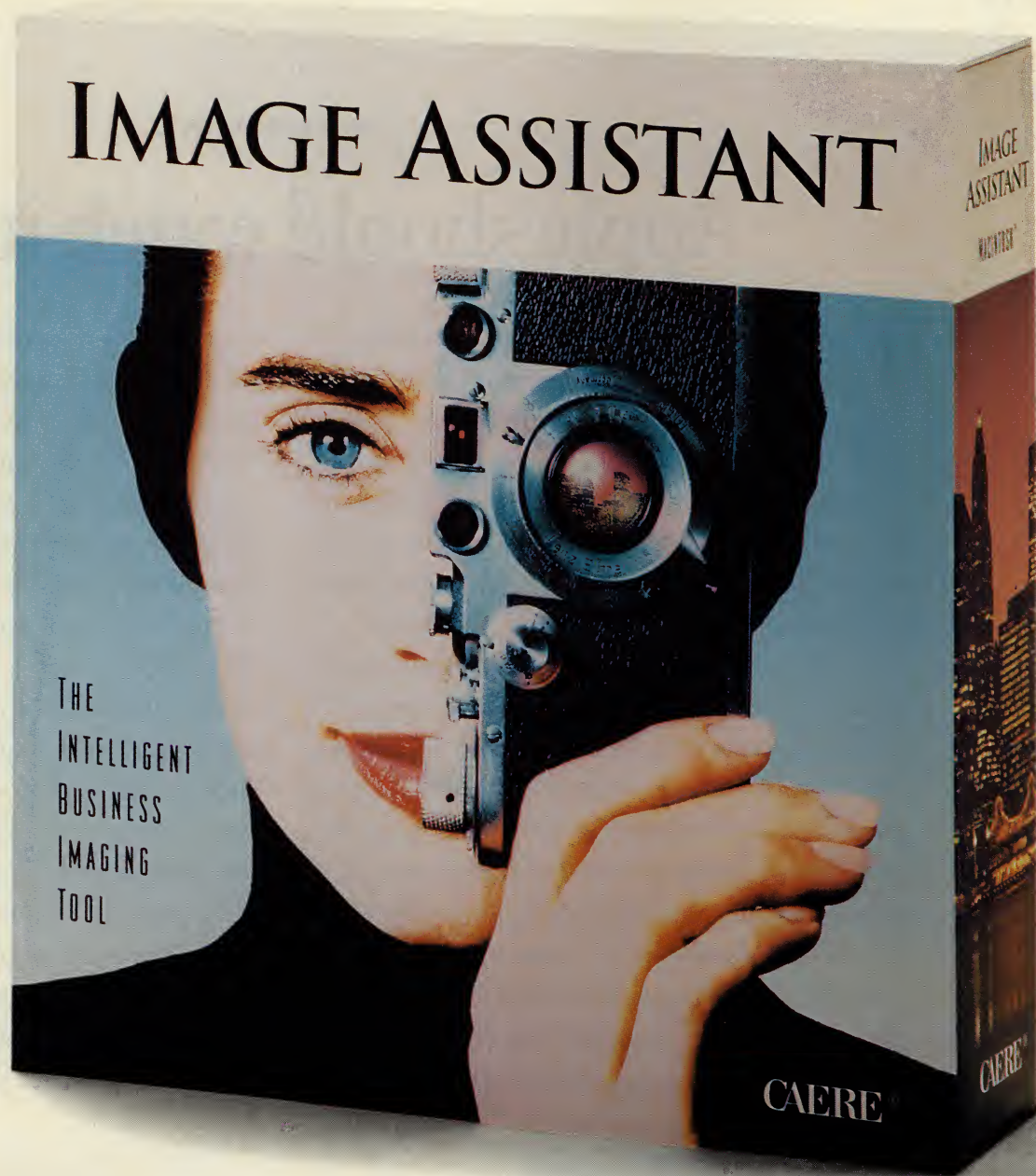
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EDITORIAL

Apple should watch its step

If ruthlessly appropriating markets pioneered by others were a crime, Apple might well be judged Public Enemy No. 1 by many of its developers.

The company in recent years has introduced a host of products that duplicate capabilities already available from third parties. Just in the past six months, it has moved into the retail font field, rolled out DOS-mounting and Finder-alternative utilities and introduced new PowerBook modems at surprisingly aggressive prices. And it is already beating the drums for its upcoming messaging server, AppleScript starter kits and file-synchronization software.

If dragged before a jury of their peers, Apple managers no doubt would argue that these moves are needed to broaden the company's business base and enhance the value of its products, particularly in light of Microsoft Corp.'s relentless drive to add more services to its operating-system software.

Indeed, users do benefit when Apple folds more functionality into its operating system, and we ourselves have often called on the company to do just that.

But Apple should remember that the health of the third-party development community also is critical to the future of the Mac platform. The company needs to pick its new markets carefully, aiming for niches where real gaps now exist and where it can introduce significant new technologies — not just for any category where it can hope to generate some quick profits.

QuickTime, for instance, brought something new to the platform, and rather than undermining third parties, it created a wealth of new opportunities for them. But in other cases — for example, the font pack, Macintosh PC Exchange and At Ease — it's hard to point to any benefit to users that wasn't available from third-party solutions, while the potential damage to developers who suddenly find themselves competing with a multibillion-dollar marketing giant is very tangible.

If third-party developers frustrated with Apple's capricious behavior stop developing for the Mac, both the company and its customers will be the losers. □

Commentary

Wishing Apple a happy new year full of adversity

What do you give a company that has almost everything?

There are some fairly obvious gifts we could place under Apple's tree — besides more PowerBook 180s and Quadra 950s. For instance, one could hope for a little more clarity in the Mac product line — there are just too many Mac models out there.

Still there is merit in the product- and channel-mix experiments Apple is conducting. Better that Apple tries a little bit of everything and sees what works rather than be locked in "analysis paralysis."

Others, unimpressed by Version 7.1, might wish for better system software. They need not wish much longer: 1993 looks like the year for many nice, relevant improvements, ranging from QuickDraw GX to OCE (Open Collaboration Environment).

Besides making the Mac operating system richer, these new extensions will help restore differentiation to Macintosh applications. Windows is still substantially behind the Macintosh in a number of areas, such as ease

of installation, modification and everyday operation. But Windows applications have increasingly matched, and in some cases bettered, their Mac counterparts. Perhaps the 1993 vintage of the Mac operating system will encourage developers to reverse that trend.

Damned if you do. In general, from system software to new CPUs, most of the things we could wish for Apple already are in place or under development.

So instead of hoping for the obvious to happen a little sooner, less expensively and in greater quantities, is there anything radically different we could wish for Apple?

Recently, observers have been reviewing the record of Apple's public announcements and have pointed to a number of zigs and zags in the company's strategic statements.

To these critics, Apple's handling of the personal digital assistant concept is another example of intemperate predictions followed by babbling backpedaling.

It's a Catch-22 for Apple — criticized for nurturing its current product line and criticized when looking to start something radically different.

Merry chaos. But there is another perspective on a "disorderly" Apple.

The search for the idea, the product, the market capable of radically changing an existing business cannot be an orderly process.

Such a creative endeavor must ruffle feathers, it must threaten accepted ideas, and it cannot be conducted with the establishment's approval.

When the Mac made its debut it was met with a great deal of criticism. Some was because of its unfinished state; most came from the fact it was different. Yet it has since become the benchmark by which personal computers are judged.

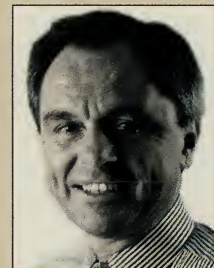
With this in mind, my wish is that Apple enjoy not less but even more of the creative disorder it will need to hit on a really new, big idea someday.

With Newton, for example, one should not be concerned with appearances of disorder. To the contrary, one ought to worry about too much tidiness. Once the corporate immune system kicks in, creative irritants are smothered by official lymphocytes.

When Newton comes out, we'll see if corporate "clean living" has ruined a chaotic new concept.

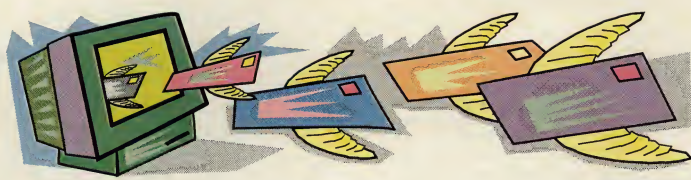
Lastly, I wish for a little dash of adversity for Apple. It's good for the soul. As Victor Hugo, the great Gaelic bard, once said, "Adversity makes men; prosperity makes monsters."

Happy new year! □



JEAN-LOUIS GASSÉE

LETTERS



MacTemps lays claim to status as No. 1 in hot temp market

I was pleased to see the story "Temp workers offer high skill level" (MacWEEK, Oct. 26) as a positive look at the many benefits of Mac-specialized temporary help. It is a terrific concept that is helping businesses at all levels to improve their efficiency and the quality of their work. I was also pleased to be interviewed by the author of the piece, who described well the strengths of Mac temporaries.

I was surprised, therefore, that the story did not mention MacTemps, particularly given that MacTemps is the biggest and, arguably, the most obvious player in the Mac temporary industry. Our mission is to make sure that locating a good Mac temporary is no longer restricted to a few computer-intense communities.

In the interest of serving your readers, an additional element of the story might have been to show the spectrum of choices that customers have available across the country. MacTemps, for one, is in 20 major U.S. cities and London.

As the nation's largest Mac temporary agency, we are all too aware of both the competitiveness and high quality of Mac personnel from which Mac customers can choose. It is, without doubt, a buyer's market, and we urge Mac users to explore the variety of temporary-service options that are available to them.

*Jae Ho Syn, vice president of marketing
MacTemps, Cambridge, Mass.*

Flexible charges possible with 900-number service

The story on help desks, "Help desks save time, resources" (MacWEEK, Nov. 16), was very informative. I commend MacWEEK for acknowledging the importance of the human factor, which is often overlooked when analyzing the effectiveness of a provided service. Keeping customer-service personnel in a productive state of mind is crucial to efficient service.

A new technology exists that helps desk staff customize billing to each client. Scherers Communications Inc., in conjunction with AT&T Co., is offering AT&T Vari-A-Bill Service to companies with 900-number technical-support lines. This service gives the help desk or the customer the ability to change the price being paid by the caller, with the caller's consent, while the call is in progress. This empowers the service personnel to relieve a customer of charges, thus maintaining the integrity of the service and the organization.

This service presents a new opportunity by

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offering a flexible cost-recovery vehicle for time and resources required to those companies that would otherwise be unable to provide this service. Even the desk that is set up to refer calls to the appropriate department or vendor can utilize the AT&T Vari-A-Bill Service feature and apply a specific rate to the call before it is transferred.

The recent growth of business-to-business applications and the advent of this new service from AT&T combine to make the 900-number arena a powerful sales tool.

*Dan Calder, audiotext support specialist
Scherers Communications Inc.
Worthington, Ohio*

Word to resellers: There's nothing new under the sun

As an Apple reseller for a number of years, I can identify with the sentiments expressed by Scott Harris in the Soapbox "A new catalog of Apple's disregard for its dealers" (MacWEEK, Nov. 16).

I was reminded of this quote, which I first encountered while in school:

"... But 'tis a common proof, That lowliness is young ambition's ladder, Whereto the climber upwards turns his face; But when he once attains the utmost round, He then unto the ladder turns his back, Looks in the clouds, scorning the base degrees, By which he did ascend."

This is Brutus' assessment of Julius Caesar from Shakespeare's "Julius Caesar," Act 2, Scene 1.

"Twas ever thus, guys! So why should we be surprised?"

*Phil Kerrigan, managing director
Castle Systems, Sydney, Australia*

We've looked at 'pulling a Clinton' from both sides now

Phil Wilfong's letter (MacWEEK, Dec. 7) that was critical of Scott Harris' metaphorical reference to Bill Clinton in the Soapbox "A new catalog of Apple's disregard for its dealers" (MacWEEK, Nov. 16) is proof positive of the hypersensitivity of liberals to any criticism, real or implied, of their sacred icons.

Would Wilfong's sensitivities have been so offended if Harris had said Apple "pulled a Bush" as a metaphorical description of Apple's squandering an opportunity (a la Bush and Desert Storm)? Of course not. That would have been a proper exercise of free speech.

I suggest Wilfong listen more to the man he despises, Rush Limbaugh, and take his best advice for liberals: "Lighten up! Enjoy life a little more!" I sincerely hope MacWEEK will resist any effort by the PC crowd, as in political-correct, to influence its editorial creativity.

*Greg Thomas
Carmel, Ind.*

The Mac Manager

The new year will bring new approach to Newtons



DON CRABB

Welcome to 1993, a watershed year for Apple, its customers and Mac managers everywhere. You already know most of why 1993 will be an important transition year: more Macs that are both cheaper and faster, the countdown to the PowerPC, the kernelization of the system, and ... ? The Newton personal digital assistants (PDAs).

Have you caught Apple's strategy on this one? First it announces the Newtons with a great deal of professionally generated excitement at the summer Consumer Electronics Show in Chicago. The press jumped right on the bandwagon: "Newtons to take consumer-electronics market by storm," screamed the headlines. "Apple to become the Sony of computers," opined others.

But then, after getting the market juiced for the arrival of the Newtons, Apple pulled back from the hoopla and refocused the Newtons. Now we hear Apple CEO John Sculley talking about the first Newtons as highly specialized business machines, not consumer baubles likely to fail in a market already crowded with all manner of high-tech baubles. Instead, the first Newtons will be targeted business devices that fit into the scalable Macintosh information architecture, as anointed by VITAL.

In a word, folks, that's brilliant.

Sacrificial lambs. Not surprisingly, Apple's going to let all those other vendors fight among themselves for the general-purpose pen-based computer market (a decidedly small, though important, niche). Meanwhile, it will sit back and focus the Newton on specific business needs.

Sure, the first Newton won't be all that exciting, since its specific tasks simply will be to cover the basic record-keeping, data-access and electronic-mail functions that

business travelers need but don't want to lug a PowerBook around to get.

Apple needs that "Sharp Wizard on Steroids" Newton to satisfy the basic pent-up demand and to set the stage for a whole slew of these devices.

But seriously. Mac managers take these Newtons seriously now, and here's why: Apple already has proven with the PowerBooks that when push comes to shove, it can deliver the goods.

I fully expect Apple to do exactly the same thing with the PDA market.

For Mac managers, that means we'll have to learn to adapt our networks to handle these devices. None of these adaptations will be easy, but the strategic rewards surely outweigh the requisite angst.

Consider the case of the business traveler with a Newton 400. It's been built to access large SQL databases via radio-frequency packet communications. While she's cooling her heels at Chicago's O'Hare International Airport waiting for the inevitably delayed flight to board, she can pop out the Newton 400 from her coat pocket, download the new manufacturing figures from the Midwest region, run them through a complex Newton spreadsheet model that highlights the good and the bad, and then automatically radio a quickie report to her boss via the company's PDA communications server. And all of this will take place in about 10 minutes, with almost no intervention on her part (save for starting the process itself).

That's what Newton PDAs eventually will bring to the party. That old Knowledge Navigator video doesn't seem so far-fetched anymore, does it? □



Mac Soapbox by Terry Morse and Lloyd Chambers

Myths about compression need to be cleared up

The "urban-legend" phenomenon is no stranger to the software industry, and it seems that no other software category is more subject to folklore than data compression. These myths arose in concert with data compression's rapid growth. Since its introduction less than one year ago, Fifth Generation Systems Inc.'s AutoDoubler has sold more than 100,000 copies. When a new product category becomes that popular that fast, it takes time for common wisdom to catch up with product popularity.

MacWEEK's recent article "On-the-fly data compression: Is it worth the time, hassle?" (Nov. 16, 1992) — while thought provoking — unfortunately contained some folklore and myth about data compression. As the leader in the Mac file compression market, we wish to correct some of the inaccuracies, at least as they relate to our flagship product AutoDoubler.

Myth No. 1: Background compression slows things down. A well-designed background process should use only idle computer resources. This is the case with

AutoDoubler, which yields to all foreground applications and shares times with other background processes. AutoDoubler never compresses when the computer is in use; rather, it waits until the machine is idle before going to work (not unlike a screen saver).

Myth No. 2: There are a lot of dissatisfied users on-line. We occasionally survey our customers to find out how satisfied they are with our products. The satisfaction level for AutoDoubler has consistently tallied above 90 percent, a very high figure for a software product. Every customer counts, but a statistical survey is a much better indicator of customer satisfaction than the posted messages of a few disgruntled users.

Myth No. 3: All active compressors will have compatibility problems. Software conflicts may occur with any product, although they are not common with AutoDoubler. Its popularity alone reduces the likelihood of a conflict because new products are tested against ours before

being released. Since AutoDoubler's popularity exploded, being AutoDoubler-savvy has become a virtual requirement for new products. If a conflict does arise, resolution is simple — just expand the conflicting file and go back to work.

Myth No. 4: Driver-level compressors have almost no conflicts. We have researched driver-level compression but have serious reservations about implementing it on the Mac operating system. We have found situations in which a driver-level compressor simply won't work, causing file corruption. Our product does not use driver-level compression for this reason. Unless these fundamental problems can be overcome, we don't plan to produce a compressor of this type.

Myth No. 5: Compressed files are not recoverable. We take nothing more seriously than safety and reliability. Performance, convenience and development costs all take a back seat to data integrity. In fact, compressing a file with AutoDoubler actu-

ally improves its safety. Since fewer disk blocks are used to store a compressed file, the chance that the file is stored over a bad block is reduced.

Safety also is increased by AutoDoubler's built-in integrity checking. AutoDoubler checks all disk writes to guarantee integrity during compression and expansion, keeping the original file intact until the data is proved to be reliable. Compressed files can be recovered after a disk crash using a standard disk-recovery utility. If a file is damaged in a disk crash, AutoDoubler's repair utility restores all but the damaged portion of the file.

It takes time for any new technology to be understood, even when that technology is very widely used. Even so, it is disappointing when mythology is printed as news. We hope we have been able to shed some light on the rumors surrounding file compression. □

Terry Morse and Lloyd Chambers are, respectively, director of compression marketing and director of compression development at Fifth Generation Systems Inc., publisher of the AutoDoubler and DiskDoubler compression utilities.

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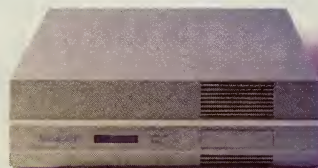
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REGISTRATION

(What is it?)



It's an SNA gateway. (That's nothing new.) **It's also a local router.** (Excuse me?) **It's an SNA gateway and a local router** (You mean in one product?) **in one product. So it provides you with two solutions in one:** (Let me guess; the functionality of a gateway along with the performance of a router.) **the functionality of a gateway combined with the high-performance of our router's SPARC processor.** (I was close.) **Since this new product** (I think it should be called a gateway-router.) **performs two functions at once, it offers unprecedented levels of administrative convenience and manageability.** (But does it access multiple LANs?) **It also accesses multiple LANs, including Token-Ring, Ethernet, and LocalTalk,** (Ask a stupid question...) **and supports mixed PC environments such as Windows, Mac, and DOS.** (Holy Toledo.) **Naturally, our Netway gateway-router** (Hey, that's *my* name for it.) **can route Novell IPX and AppleTalk protocols,** (And?) **and comes complete with powerful 3270 services like terminal and printer emulation.** (I wonder who came up with this thing.) **As you might have guessed by now, the company behind this revolutionary product is Avatar,** (I should have known.) **leaders in SNA connectivity for over a decade.** (Must be about time for the obligatory 800 number.) **For more information, and our free "Gateway-Router Guide to Network Manageability," send in the coupon or call 1-800-AVA-3270.** (A free gateway-router guide? You must have read my mind.)

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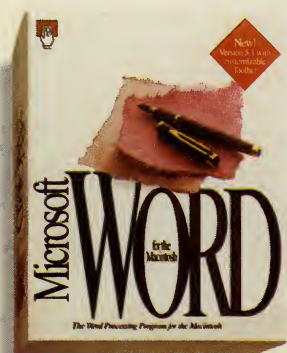


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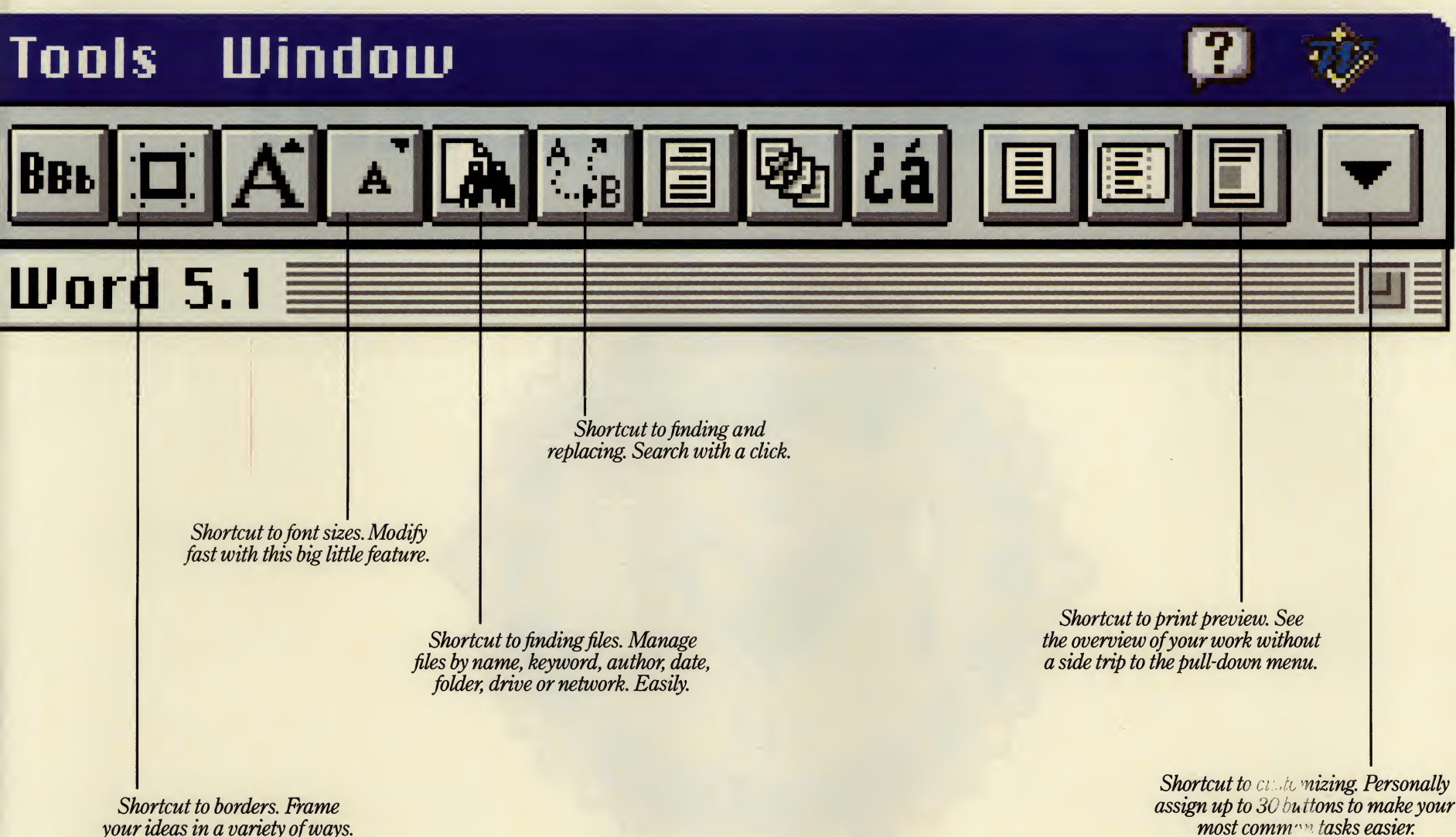
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The State of MAC MANAGEMENT



**New technologies,
increasingly complex
networks and tight
budgets mean new
demands on Mac
managers. MacWEEK's
annual survey highlights
the strategies they are
adopting in response to
these challenges.**

Managers adjust to year of rapid change

System 7 is a hit, applications are increasingly compatible across platforms, budgets are tight, and workloads for in-house personnel who provide Mac support and maintenance have increased.

These are the results of MacWEEK's latest State of Mac Management survey. Each fall for the past three years, MacWEEK has conducted this survey to measure current conditions in the corporate Macintosh computing environment. The survey addresses topics such as the budgets companies plan to set aside for Mac equipment; the availability and extent of training, support and maintenance programs; networking and cross-platform policies and procedures; data backup practices; and software administration.

This year's survey comes at a time when the Macintosh market has experienced tremendous growth and change. InfoCorp, a Santa Clara, Calif.-based market research company, estimates that 1.6 million Macs were sold in the United States in 1992, up nearly 23 percent from 1991's sales. The past

year also has seen further diversification of the Macintosh product line, with the addition of high-end Quadras, the Mac IIvx, the Performa series and new PowerBook models.

To track the effect of this rapid change on Mac managers, this year's report includes comparisons with last year's State of Mac Management survey, which was conducted using a comparable questionnaire and methodology. Highlights of the survey reveal the following conclusions:

Budgets. As expected, recent economic conditions have prompted more conservative business spending. Slow growth rates, corporate restructuring and credit crunches often are cited as leading factors.

Recent Department of Commerce projections show that business spending for computer hardware will rise much less quickly in 1993 than it did in 1992. Revenues for software and post-sales services, however, are expected to keep pace with last year's growth rate.

Judging by survey results, Mac managers

are not immune to fiscal uncertainty. The percent of subscriber sites planning to increase budgets for new Macintoshes has declined slightly from last year, while the percent planning to increase allocations for networking and connectivity has remained about the same.

Operating systems. Both System 7 and Windows are more strongly established at MacWEEK work locations than at general business and institutional settings. At MacWEEK sites, four in 10 Macs have System 7 as the primary operating system — three times as many as one year ago.

The installation rate of Windows has increased but not as rapidly: 39 percent of IBM PCs and compatibles now primarily run Windows, compared with 29 percent one year ago.

Networks. Compared with Macintosh sites overall, MacWEEK sites are highly networked environments. InfoCorp reports that

in 1992, 62 percent of the total installed Macs were in LANs, compared with an 84 percent average for MacWEEK work locations.

For those Macintoshes connected to mini or mainframe computers at MacWEEK sites, direct cable connections — a less costly alternative than bridges and gateways — are growing in popularity. Almost one-third (30 percent) of Macs connected to large computers have direct connections, up from 24 percent last year.

About the same percent of subscribers report the use of network backup system for their Mac file servers this year as last year — about two-thirds of those surveyed. The remaining one-third report no provision for data loss from server failure at their sites.

Training and support. MacWEEK locations are more likely this year to provide training in-house than to use an outside vendor. In fact, use of outside classroom education has decreased, as has the purchase of books or other documentation.

In addition to training users, Mac managers also must support them. While the percent of subscribers who say their sites provide full-time microcomputer support staff has increased slightly from last year, each support person is working harder. Help-desk personnel working primarily on Macs will support an average of 129 users each in 1993, compared with 80 in 1992.

Microcomputer maintenance. Maintenance refers to all nonwarranty repair of microcomputers and related equipment, such as CPU upgrades, cleaning and testing. MacWEEK sites with full-time staff responsible for these functions increased this year from last year.

This conforms to a general trend in which companies, because of budget constrictions, want to decrease dependence on external vendors. Mac and PC maintenance increasingly is performed in-house because business is "driven by the need to reduce the level of MIS expenditures," said J.B. Woods, an analyst with Prognostics Inc., a market research company in Santa Clara, Calif.

Software. The Software Publishers Association reports that piracy of business-application software is decreasing. Domestic dollar losses for Mac and DOS software in 1991 were estimated at \$1.2 billion, 41 percent lower than the previous year's \$2 billion figure.

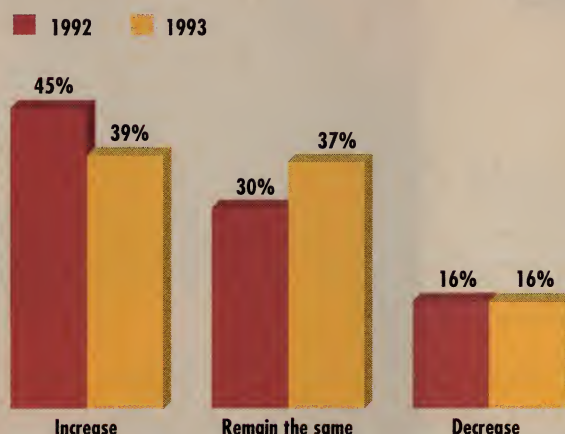
MacWEEK subscribers report that their sites are more likely to use procedures to ensure compliance with software licenses. This year's survey shows more work locations are physically examining Macs, either regularly or through spot checks. Network tracking software also has increased in popularity.

Fifteen percent of those at sites using license-tracking software employ network solutions that monitor application use in real time. Only this group, up from 10 percent in 1992, can effectively comply with licenses limiting the number of concurrent users.

Conclusions. The Mac manager's job has not become any easier in the past year. With tight budgets, ongoing user demands for support and training, and the need to maintain microcomputer installations, Mac managers in 1993 will have to do more with less. □

Key findings: Budgets, System 7, support and interoperability

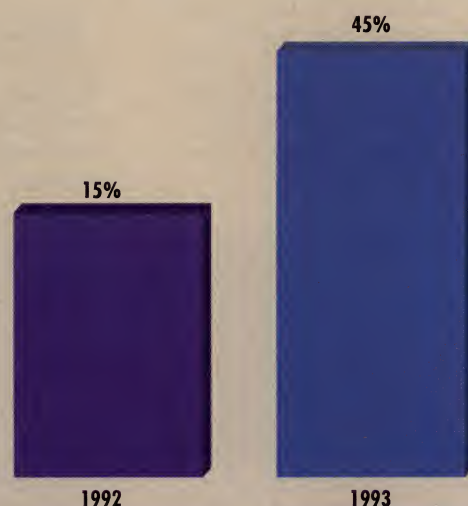
Budgets



Base: MacWEEK subscribers

Compared with those surveyed last year, more sites are planning to stick to their existing budgets for new Mac purchases in 1993.

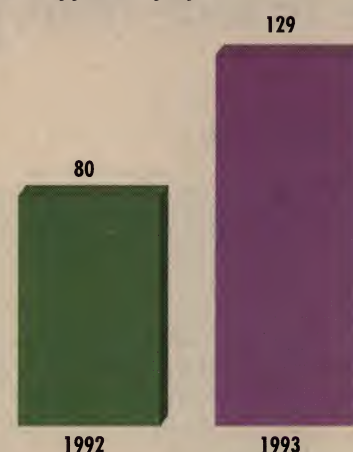
System 7



Base: Total Macs

System 7 is installed on three times as many Macs as last year.

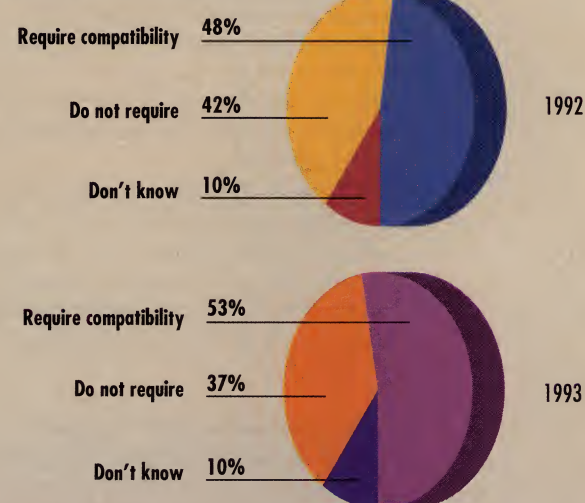
Users per Mac-support employee



Base: Sites with user-support personnel

Full-time personnel who primarily support Macs have on average more users this year than last.

Cross-platform compatibility

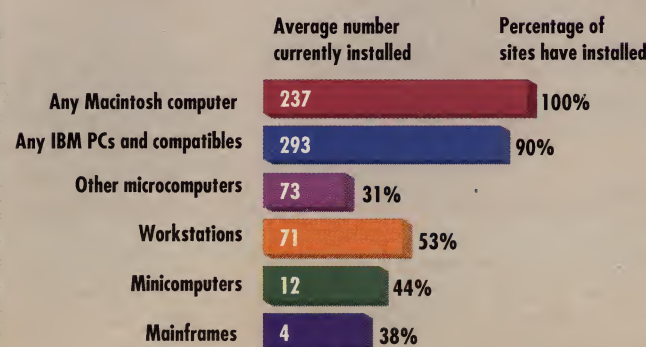


Base: Have multiplatform environment

For the first time, a majority of companies require cross-platform application compatibility.

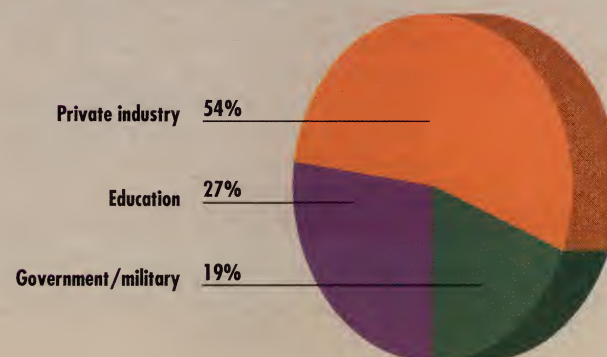
Demographics

Types of computers at work sites



Base: MacWEEK subscribers

Company's primary business



Base: MacWEEK subscribers

Methodology

The MacWEEK 1993 State of Mac Management survey was conducted by mail among 990 MacWEEK subscribers. Participants were selected on an nth-name basis from MacWEEK subscribers in the 48 contiguous states. The study was conducted comparably with the 1992 study, using the same questionnaire and research procedures. Value-added resellers, value-added dealers, computer-related retailers and distributors, and computer consultants were excluded. A response rate of 51 percent was achieved after two mailings. Field work was conducted between October and November 1992. An independent market research company, Rotstein-Tauber Inc., was responsible for all survey details.

Budgets reflect times: Managers forecast fewer Mac purchases

By Eric J. Adams

In lean economic times, managers are scaling back purchases of new Macs and re-evaluating equipment.

If you need further evidence that the national economy is in the doldrums, examine the budgets of Macintosh managers for the coming year.

Only 39 percent of those polled in the latest State of Mac Management survey reported that they plan to increase purchases of Macs in the next 12 months. Last year at this time 45 percent of all MacWEEK subscribers surveyed said they would increase spending on Macintoshes at their work sites.

Eastman Chemical in Kingsport, Tenn., a division of Eastman Kodak Co., is one of those swing companies. This time last year the company had escaped the recession unscathed, according to Roger Todd, advanced information technology analyst.

"That's not the case this year," Todd said. "Our budget has certainly decreased. We will be buying very little and that includes software upgrades."

End users at Eastman Chemical also are being asked to make do with general-purpose, shrink-wrapped software whenever possible rather than custom-developed or niche software. "Our primary emphasis is on making do with what we already have," Todd said.

Big companies don't escape. Even those companies with bigger budgets this year are casting an eye toward austerity.

"We want everyone in the company to have what they need, but we hope to be able to do more with less this year," said Jackie Conner, microcomputer manager for Teledyne-Brown Engineering of Huntsville, Ala.

Conner's budget is up a healthy 10 percent this year and much of the extra money designated for the Mac platform is going toward PowerBooks and high-end Macs.

Weyerhaeuser Co. of Federal Way, Wash., also is planning an aggressive buying spree this year, but instead of springing for high-end models, the company is allotting a greater percentage of its budget for upgrading older machines with larger hard drives and accelerators, said Ray Craft, manager of strategic planning.

"We're going 50-50 for upgrades and new machines," Craft said. "It's not a stated policy, but it's in the back of the minds of people to keep purchasing low-key. We have to get the best bang for the buck."

Commitment to Mac in question.

Other companies are re-evaluating their commitment to Macs altogether. Budget woes have prompted ESSO, the Calgary, Alberta, subsidiary of Imperial Oil, to stop buying Macs altogether.

The company plans on phasing out most of its 800 Macs over the next several years, except those machines used for specific

graphics and engineering applications, said Steve Suche, senior systems analyst.

"The cost of maintaining and supporting two infrastructures, two networks, two software operating systems and two software sets extends our capability beyond what our budget allows. We like Macs, but we can't afford to support Macs and Intel-based machines," Suche said.

He added that the cost of fully configured Macs also played a role in the decision.

"We can buy a Compaq ProLinea 486 for very little compared to a comparable Mac. With Windows narrowing the usability issue, Intel machines are more attractive," Suche said.

IS role gets redefined. Still other companies are facing up to budget constraints by redefining the role of information systems in the corporate environment. "We don't have the dollars and the bandwidth within our department to provide all the services we had hoped," said Tyrone Strickland, network-services manager at 3Com Corp. of Santa Clara, Calif.

Consequently, Strickland and others have scaled back programs and canceled others altogether.

Taken together, networking and connectivity was the only area in which more than half of all respondents said they would be spending more money.

"We wanted to bring fax capabilities to the desktop, we wanted to create standardized on-line help, and we wanted to implement remote computing for Mac users. Now we won't be doing any of these things," Strickland said. "We've had to ask workgroups to prioritize their needs because we can't fulfill all of them."

Additionally, IS at 3Com is no longer the full-service provider it had been in the past, Strickland said. "Desktop support has moved closer to the network site and further from IS. We're asking end users and workgroups to do more for themselves, to be more autonomous."



JAMIE TANAKA

The shift in focus at 3Com has forestalled the need to change any long-term plans. "We haven't wavered from our two- and five-year plans. These changes, hopefully, will help us get there," Strickland said.

Budgets are there for networking.

Many companies report that their long-term plans include greater connectivity and networking, and the numbers show that most companies are firmly committed to that goal.

Of the Mac managers polled in the survey, 54 percent said their budget will increase for connectivity and networking this year — the same figure as last year. Taken together, networking and connectivity was the only area in which more than half of all respondents said they would be spending more money.

In comparison, only 23 percent foresee greater spending for user training and 21 percent see more budgeting for user support.

Downsized staff keeps budgets

down. The slowdown in Mac buying can be attributed to another factor — lost jobs.

"We've had a major reduction in work force, and we have a lot of additional machines. We just don't need to buy new equipment," said Bill Cook, technical adviser in the technical resources division of Pitney Bowes in Stamford, Conn.

Though Pitney Bowes has been hit particularly hard by the recession, Cook sees a silver lining in the second year of budget cutbacks at his office. "Sometimes running into tight budgets makes you ask yourself if you can do a better job, and the answer is invariably yes," Cook said.

Among short-term measures, Pitney Bowes has instituted a reduction in the number of software programs in use, which Cook hopes will reduce support costs. "We keep up on upgrades, but our preferred tool set is smaller."

More importantly, the belt tightening has forced IS management at Pitney Bowes to clearly define its goals.

"When you have less money, you have to take greater care in how it's spent. I think our two- and five-year goals are much clearer in that we know we have to do with less," Cook said. □

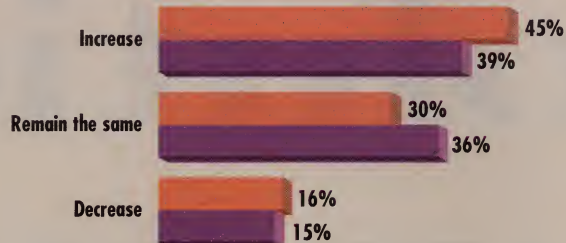
Tyrone Strickland, network-services manager at 3Com of Santa Clara, Calif., said the company is unable to fulfill all its needs because of budget constraints. However, the company hasn't had to depart from its two- and five-year plans.

Twelve-month projected budgets

1992 1993

Since last year, an increased percentage of sites plan to maintain existing budgets for computer products. For microcomputer support services, the percentage of sites planning to increase or maintain expenditures is about the same as 1992. Overall, only a minority of sites plan to decrease spending for either products or support services.

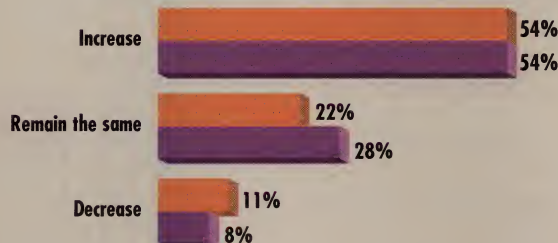
New Macintosh computer purchases



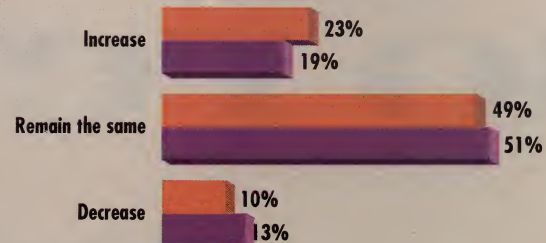
New IBM PC and compatible purchases



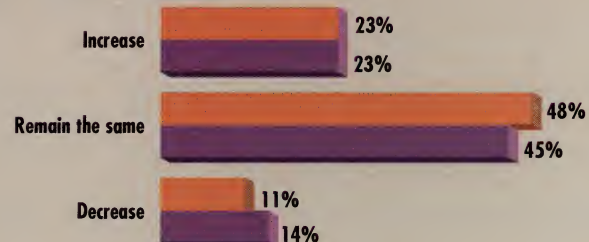
Connectivity, networking hardware/software purchases



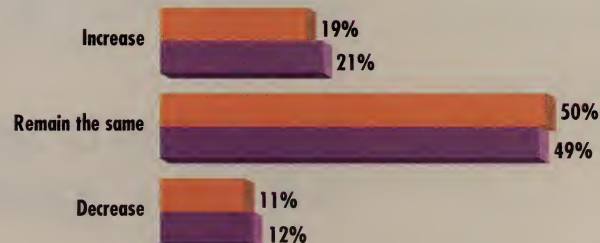
Microcomputer maintenance



User training



User support

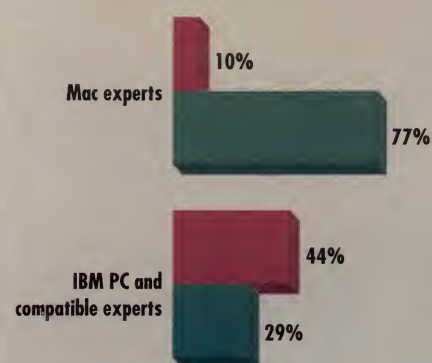


Base: MacWEEK subscribers

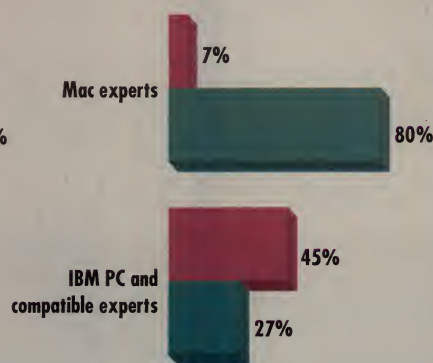
Who subscribers rate as "important" in purchase decisions

Not important Important

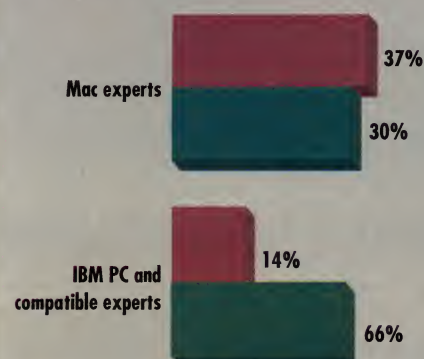
Determining need for Mac products



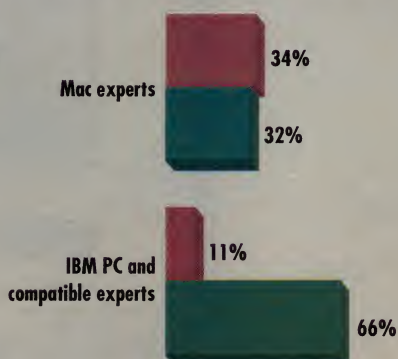
Specifying brands for Mac products



Determining need for IBM PC and compatible products



Specifying brands for IBM PC and compatible products



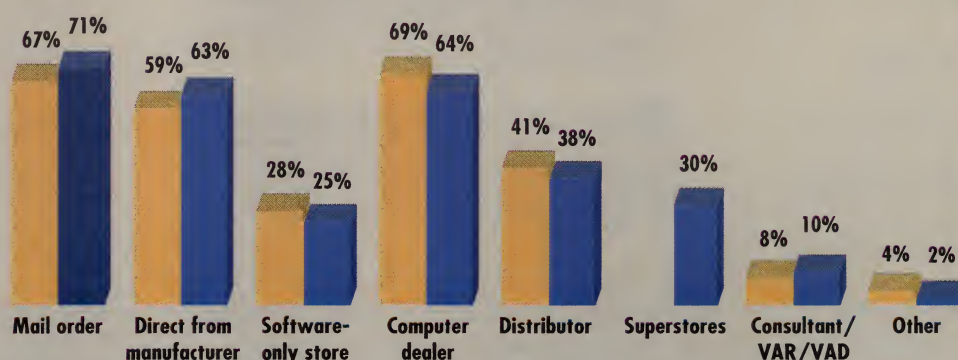
Base: Mac products: MacWEEK subscribers

Base: IBM PC and compatible products: Have IBM PCs and compatibles installed

How software is acquired

1992 1993

Software



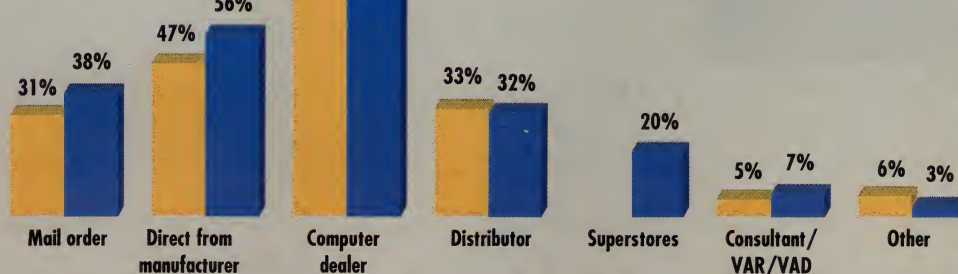
Base: MacWEEK subscribers

Software is acquired mainly through direct channels, directly from manufacturers and computer dealers, with an increase in the usage of mail-order and direct-from-manufacturer buying.

How hardware is acquired

1992 1993

Hardware



Base: MacWEEK subscribers

Hardware is purchased primarily from dealers, with a growth in the use of mail-order and direct-from-manufacturer buying.

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11:30 AM

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1:30 PM

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Who doesn't have System 7 and why

By Jim Leeke

At MacWEEK subscriber sites, System 7 use has tripled since last year. But a significant number still have not switched. Why?

As this 1993 State of Mac Management survey states, 45 percent of the Macs installed at MacWEEK subscriber sites now use System 7 — triple the 15 percent reported a year ago (see chart, Page 89). But is the glass half full or half empty? Although more than a year has passed since Apple introduced System 7, a majority of Macintosh users still have discovered no compelling reason to upgrade to its new features.

Hangers-on, why? Users and managers cite any number of reasons for clinging to familiar, reliable System 6. These include cherished software preferences; hardware limitations; cost implications; additional training time; and the “FUD” factor of fear, uncertainty and doubt.

“When people hang on to System 6, it’s usually for very personal reasons,” said Donald Young, a senior designer/ animator in the Support Services group at Boeing Co. of Seattle. For example, he said, the holdouts “might be using a software package that hasn’t been upgraded, and they want to hang on to it.”

Michael McDuffy, an Apple support coordinator for the University of Texas Health Science Center at San Antonio agreed: “That is a point of concern. There are some older software packages that people are not completely comfortable with running on System 7. They may work well on 7, or they may not.” Often, this reluctance is spurred by what these users regard as additional problems with installing or using System 7.

“There are all types of users, but the majority is the type who is not going to get out there and experiment,” McDuffy said. Many such Mac users have “finally learned what they could do with System 6 and how to use it right. Now they have seen System 7 and heard the stories, and they are not looking forward to switching over.”

When System 7 was introduced, for example, problems with reformatting non-Apple hard drives and with losing access to data on hard drives “put some users into a tizzy” at the Health Science Center, McDuffy said. Although the problems eventually were resolved, “the stories get around. People use them as an excuse not to go to System 7.”

Not taking full advantage. McDuffy personally likes the current operating system, whose “benefits far outweigh my reservations.” But he realizes that education takes time. Some new System 7 users “actually threw away aliases I built for them,” he said, and file sharing is still “very sparse at this point. The folks who are doing it are not doing it well — they’re sharing the whole computer” instead of individual folders. Nonetheless, he sees file sharing as a major System 7 plus.

“That is certainly something we are pushing as managers because we see the benefits,” he said.

Many of the nonusers may resist upgrading, however, because they use older Macintoshes with limited memory or micro-processor speeds. “A lot of folks with older machines and limited RAM definitely are not [switching],” McDuffy said. He recommends using System 7 on “anything with a 68030 in it and enough capacity for at least 8 Mbytes of RAM.”

Feelings are similar at Hughes Aircraft in Canoga Park, Calif., where System 6 users are “mostly people who have SEs and Pluses and don’t want to give up the RAM,” said Merv Strong, a Hughes computing specialist.

System 6 and System 7 users often peacefully coexist on the same networks, as they do at the Hughes site. There the majority of Mac users still rely on System 6, and upgrading to the newer operating system is left to



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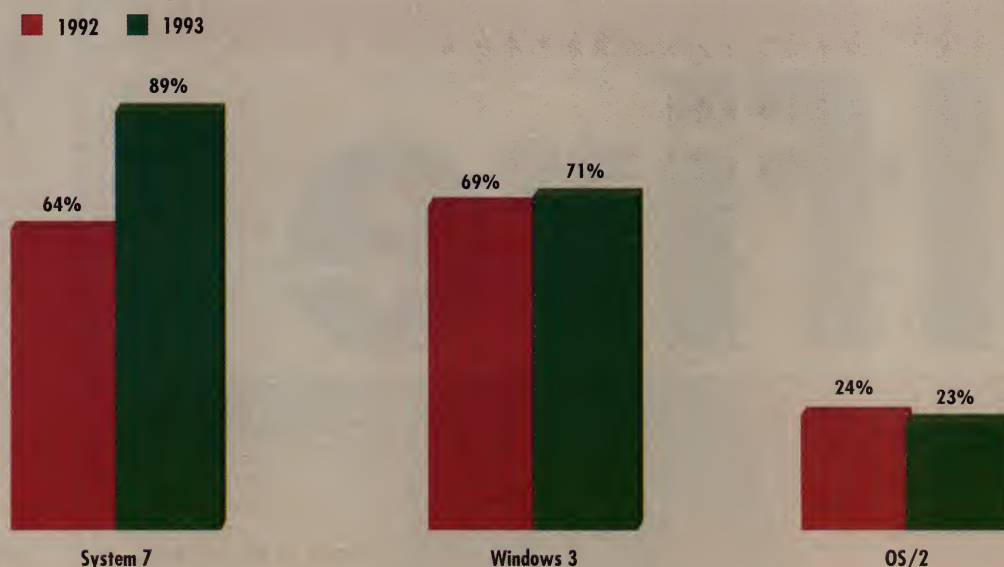
the individual user or group, Strong said. “The only thing I try to ensure is that there aren’t any LaserWriter wars, [no problems] with having two different versions of the LaserWriter drivers,” he said. If one person in a group upgrades to System 7, the others

See System 7, Page 96

Michael McDuffy, an Apple support coordinator for the University of Texas Health Science Center, said the benefits of System 7 outweigh any reservations he’s had about it.

Operating systems in use

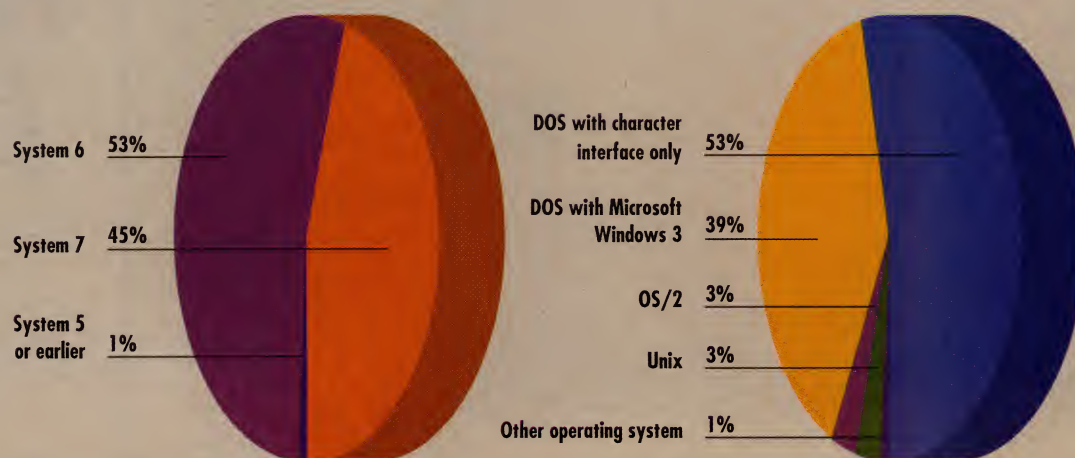
System 7 vs. Windows



Base: MacWEEK subscribers

Most sites now have at least some Macs running System 7. The percentage of Windows systems grew slowly.

All operating systems in use

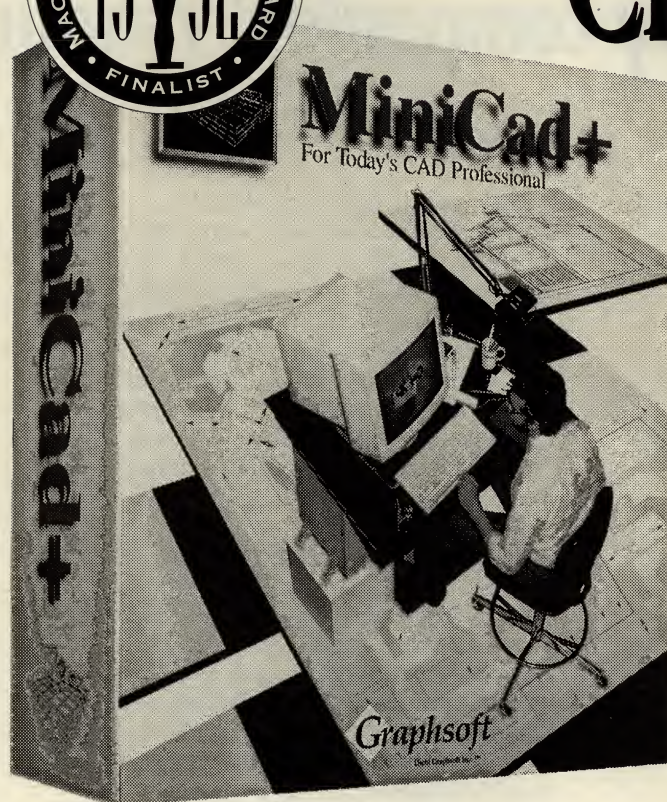
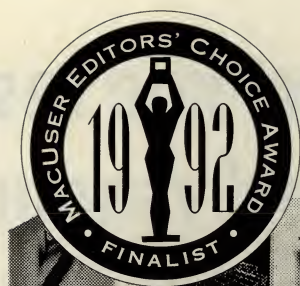


Base: Macs installed

Base: IBM PCs and compatibles installed

The majority of both Macs and IBM PCs and compatibles run earlier versions of their respective operating systems.

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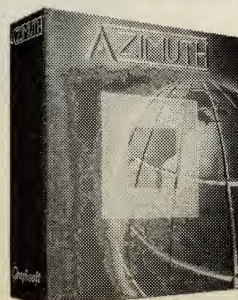
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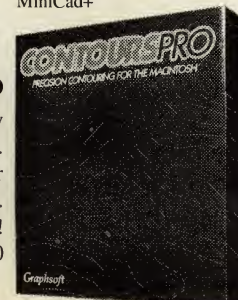
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Design company embarks on trek to System 7

Grafaktri, an exhibit design company in Ann Arbor, Mich., is typical of Mac sites facing a conversion to System 7. President W.A.P. John is installing it in careful stages as it becomes a business requirement and expects to find out exactly what it can do as he goes along.

John already has installed System 7 on one Mac, which he uses to maintain an AppleShare link to an important corporate client. He still keeps System 6 on his other machines, however, because "my prime software is not System 7-compatible," John said. That software is Akron, Ohio-based Innovative Design System's Ovation, which he uses to drive his plotter table.

His other objections include System 7's greater RAM requirement, that it "runs a little bit slower" than System 6, and that it won't run some of his shareware programs. Also, System 7 is prone to "little glitches and hang-ups" such as fonts mysteriously disappearing from his version of Fifth Generation Systems Inc.'s Suitcase (a problem he has resolved).

Despite all these objections, however, John plans to move entirely to System 7, beginning

with a new Quadra 950 and various software upgrades. The reason? "Whether I like it or not, it's becoming the standard," he said. "For a lot of telecommunications, you have to be up to 7." If an important client relies on System 7, "you have to be on 7. And I realize that more and more."

Although he has no use for System 7's balloon-help feature and is skeptical about aliases and its virtual-memory management ("it's not the same as just having RAM"), John looks forward to exploring the operating system's other features.

"The file sharing seems great," he said. As for aliases, "I suppose when I'm into it, I might appreciate it. Multitasking, I actually would [like]. There are some conversions with Ovation that can take some time. ... I could click off and go back to Illustrator."

Reluctance to shift to the System 7 operating system is, John believes, "almost a size thing. Some of the smaller design firms are System 7-shy." These companies might lag behind Grafaktri, which in turn may trail some larger clients. "In order to do business, there [must be] a certain sense of sophistication — 'Are you on 7?'" he said.

He also disagreed with Mac users who claim they aren't embarrassed about sticking with reliable old System 6. "But you are embarrassed by it," he said. "It's like, 'Can you ride a bike?' We are getting shamed into it." — By Jim Leeke



W.A.P. John, president of Grafaktri, an exhibit design company in Ann Arbor, Mich., has only one machine running System 7 right now.

System 7

From Page 94

also receive either System 7 or a compatible printer driver.

Sticking with status quo. Reluctance to switch operating systems also might stem from a natural hesitancy that hampers acceptance of many high-tech products.

"You don't know exactly what to expect," said one West Coast graphic designer. Complicating acceptance is the expectation that "you suddenly have a lot of downtime to figure out why things aren't working." (An experienced Mac user, this designer requested anonymity because "I'm not embarrassed about using System 6, but I don't want to broadcast it, either.")

This concern over lost effort or wasted time is echoed by many users who haven't tried System 7. However, truth be told, users with the new operating system experience fewer crashes than those under System 6; the improvement is attributable in part to changes in memory management.

"It's the fear of the unknown," said Ralph Conner III, a senior technician at Du Pont Fibers of Wilmington, Del., who hasn't shifted to System 7. He fears spending hours using some old, familiar program under

System 7, then somehow losing his data for "something innocuous" — some small change or incompatibility that he wasn't aware of.

"Some people tell me [upgrading] is real easy; some people say there are subtle differences you have to get used to," Conner said. "My guess is that when my boss goes to System 7, I'll go to 7 shortly after that — when I learn it on his machine."

What will cause some to switch?

Many other users expect that despite nagging worries and concerns, they too will shift eventually to System 7. At the Health Science Center, McDuffy said a majority of the Macs in the Medicine/Oncology Department will be running System 7 within about three months — up from the current 10 percent to 15 percent. Even the unnamed graphic designer concedes that "the thing that will make me switch is when an application I really want requires System 7. Then I'll make the switch because it'll be worth it."

McDuffy agreed. "Do they realize what they're missing? Not really," he said of reluctant System 7 converts. "The thing is, they don't know what to do with it. Once you show them, they think it's great." □

Evolving product line tests many companies' resources

By Paul Karon

Most prefer the "real-world" approach to testing new Mac products.

In the past year, Apple has reshaped its product line with computers such as the Quadra, with three versions, and the PowerBook, already up to a family of eight.

Apple now sells some 21 computer or printer products, and by this time next year, the company will have introduced yet another 20; more than 10 are slated to come out during the first quarter of 1993 alone. In short, more Macs will have to function properly with more-complex arrays of products than ever before.

How do you know if they work?

Someone has to test them out — after all, in real life, everything doesn't always work perfectly.

"As your larger companies invest more money and time in their computer base, they are more and more aware of the anomalies that can happen when you introduce new hardware and software products," said Hadley Brandt, national manager of strategic resources for Apple's Enterprise Systems Division.

Many ways to test a Mac. Managers' procedures for testing new machines vary: Some do all the testing in information-systems departments, where staff analysts put the computers through the paces: testing software, peripherals such as printers, and network performance.

Others toss the new computers right into the deep water. The computers are left with experienced users who check out the machines in the various computing environments of different departments through the company, then report back to the IS department. A few have special labs dedicated to testing new machines.

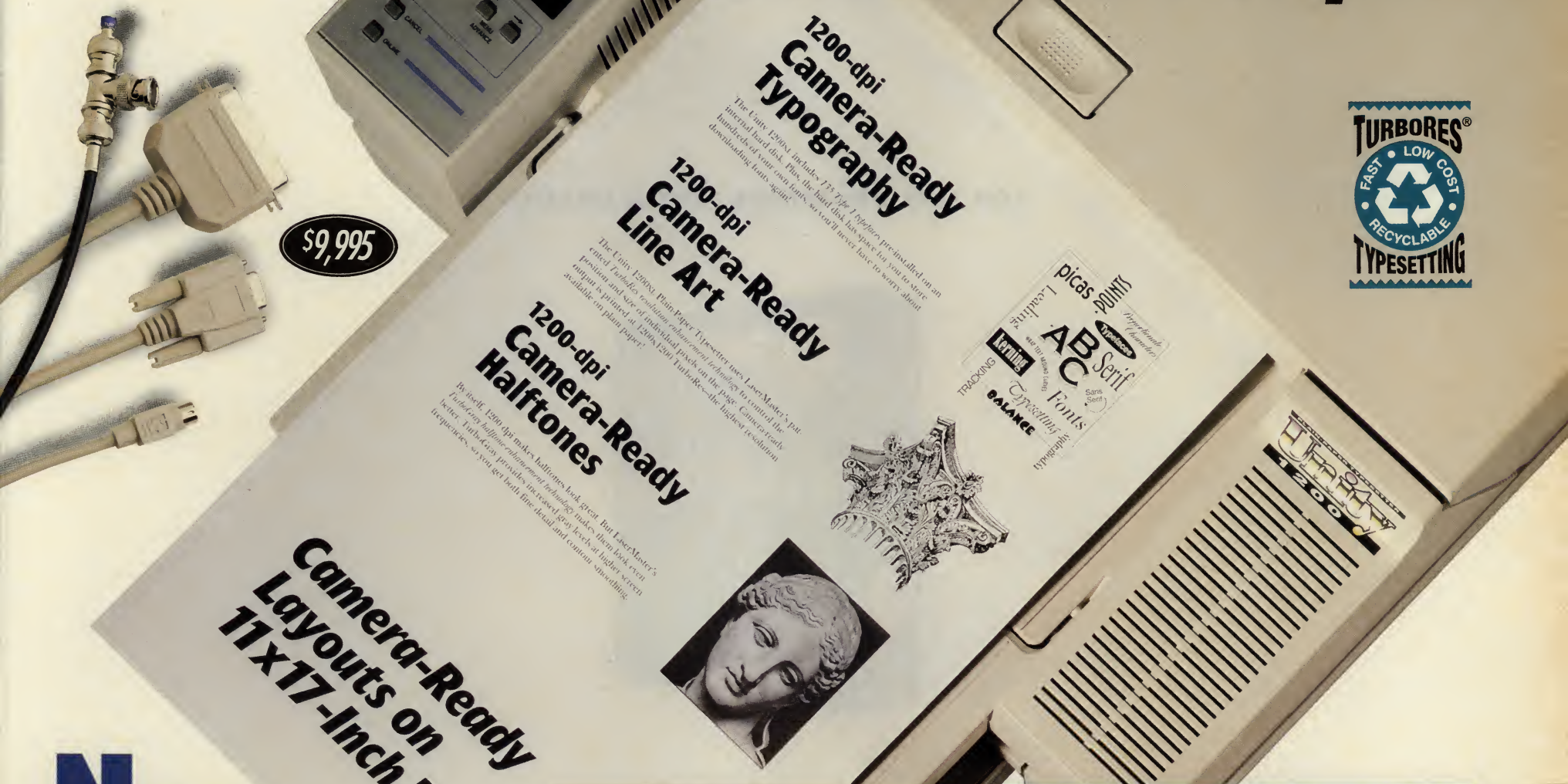
Whatever method is used, Mac managers say the testing process needs to answer two fundamental questions about new models: "Number 1, does it do what it claims?" said Rick Richardson, national director of technology for Ernst & Young, the New York-based, Big 6 accounting firm. "And two — the most important thing, really — is the new model truly compatible? That is, can

See Testing, Page 99

Brent Lowensohn, Ph.D., director of technology evaluation and support for the Southern California Kaiser Permanente Medical Care Program in Pasadena, Calif., said he believes in testing machines with a variety of users, including programmers as well as graphic designers.



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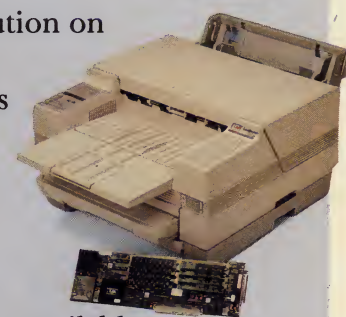
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Testing

From Page 96

you run everything you could before?"

From standard third-party peripherals and applications, such as word processors, to proprietary software developed in-house and from token-ring to Ethernet to mainframe connections, to you-name-it, bizarre quirks can pop up in even the most thoroughly tested new Macs, IS managers said.

Some good news. The good news, however, is that serious problems with new Macs are rare. Most of the teething pains in the new machines probably are familiar to those who need to get very early cracks at Apple's latest computers.

Scott Joy, project manager at Liberty Mutual Insurance Co. of Portsmouth, N.H., recalled his first experiences with electromagnetic interference from the PowerBooks' backlit screens. "We ran into those problems where the disk drive wouldn't read the floppies," he said.

Joy also watched with dismay as his first brand-new Quadra loaner — sporting the powerful 68040 chip — promptly crashed when he loaded up standard software packages, namely Microsoft Excel and Word. "We loaded them up, and it bombed," he said.

There also was the strange case of the sensitive Macintosh IIfx, according to Brent Lowensohn, Ph.D., director of technology evaluation and support for the Southern California Kaiser Permanente Medical Care Program, based in Pasadena, Calif. Lowensohn said early models of the IIfx displayed a peculiar sensitivity to the order of attached peripherals in the SCSI chain, causing failures with CD-ROM drives, scanners and the like.

"It was touchy about how the peripherals were attached, but it's something that shouldn't matter," Lowensohn said.

Solving the problems. Apple has since addressed all those problems, the managers said. The company also has recognized the need to get new products into the hands of its major customers as early as possible.

Apple's Atlanta-based Enterprise Systems Division focuses on serving the company's "enterprise-size customers" — some 630 companies with 1,000 or more employees, Brandt said.

ESD, a self-contained business unit within Apple, works with local Apple representatives to coordinate sales to these companies. The representatives provide marketing services as well as special customer support, such as systems integration consulting.

Seed machines. ESD also runs a "seeding" program to get the new models to these large accounts. The seeding usually is handled by the district sales teams. ESD has 26 districts in the United States, each with just six or eight accounts, Brandt said.

The district representatives generally have at their disposal one or two models of each product to loan out to their accounts for testing. The length of time these seed machines are available for the test periods varies, Brandt said, but is usually less than 30 days.

Often, Brandt said, ESD representatives will start briefing customers verbally about upcoming computer models in the months before a formal product release. As soon as the computers receive Federal Communications Commission clearance, usually about four weeks before

the formal introduction, they're distributed to customers under nondisclosure agreements.

"Obviously, we don't open the complete kimono (revealing everything about Apple's long-term plans)," Brandt said. "But if they're going to buy 500 new PowerBooks and we're about to release a new model that would have repercussions for them, we'll want to keep them apprised of the offerings."

Real-world testing. While one of these major accounts, the Northrop Corp., has established a special lab for testing new Macs (see story, this page), other companies prefer the "real-world" approach.

"We normally wouldn't put the machines into an artificial lab, but right into the network," said Liberty Mutual's Joy, an approach other managers share.

They prefer to use real-world tests to determine how the new computer meshes with the organization's computing environment. Most of the Macs on Liberty Mutual's AppleTalk network are IIfx and IIsi models, Joy said. If a new machine checks out with the organization's resident software — Microsoft Word, Excel, PowerPoint and Mail, as well as Symantec Corp.'s Symantec AntiVirus for Macintosh, Farallon Computing Inc.'s Timbuktu and TechGnosis Inc.'s SequeLink — then the machine has passed muster.

When the early Quadra models proved unreliable for certain AppleTalk communications, Joy's experiences joined those of other large Mac organizations in providing Apple the feedback to solve the problem in the subsequent version of AppleTalk.

"We rarely have a problem," he said. "But if there are problems, they will happen on the first machines [of a new model], like the glitches with the early Quadras."

Let the users test. Ernst & Young's Richardson uses a similar front-line approach and often puts users themselves in charge of testing machines in their immediate area.

"We get users involved in testing — we don't do the testing in a lab," Richardson said. The users' environment provides the truest test of the machine's compatibility, he said.

Kaiser's Lowensohn agreed: "The main thing is not to look at them from just one viewpoint, for example, a programmer's desk. We'll get the machines onto a desktop, into the server room and into the graphics area because in each of those areas someone will treat it differently."

But these Mac managers caution that they don't draft just anyone into the ranks of their auxiliary test corps; they're careful to find users experienced enough to guard against data loss or other catastrophes.

"We use people who are more resilient for this sort of thing," Richardson said. "They're the sort who realize that everything can go wrong and are prepared."

What? No benchmarks? Given the penchant throughout the computer industry for easily quantifiable performance measures, it might be surprising that many evaluators eschew conducting benchmark tests. For one thing, managers point out, that information is easily available in magazines.

"What's the point of going through all the effort of measuring benchmarks if the information is already laid out in two or three publications?" Joy said.

One site's testing lab

The Northrop Corp. Information Services Center recently established a special lab dedicated to testing new nonmainframe computers from DOS to Unix to Macintosh.

Called the Small Computer Innovation Laboratory, or SCILab, the installation is located at the aerospace company's Hawthorne, Calif., facility. This facility helps take the burden of coordinating the seed-computer loans and setting up the temporary workstations from the shoulders of its customers — namely all of the divisions throughout Northrop.

"What we want to do is provide an opportunity for customers to come into the lab and run evaluations of their own on different hardware and software that they'd like to see," said Fred Campo, a senior systems analyst who has helped put the lab into operation.

The SCILab owns a few permanent models, but it obtains most of its Macs and other machines as loaners from dealers and usually keeps them for 30 to 60 days, Campo said. It has a full suite of networks set up, including token ring, LocalTalk and Ethernet.

And, since it's part of the corporate TCP/IP network backbone, users can reach any of the hundreds of subnetworks within the company to test the machines on real production networks with real loads, Campo said. Dealers and vendors as well benefit from the centralized testing and demonstration lab.

"There are 15,000 people at this facility alone," Campo said. "Some vendors get the same call 200 times to see new equipment."

— By Paul Karon



Fred Campo, a senior systems analyst at Northrop's facility in Hawthorne, Calif., helped establish the company's lab, which tests new nonmainframe computers.

Besides, benchmarks tend to be information that exists in a vacuum, but computers have to work in the real world. "You can tell when you sit down at a new machine whether it feels fast or slow," Joy said.

How much testing is enough? Sometimes every nook and cranny gets checked out, but not all new Mac models require the full treatment, managers said.

"Major departures get more attention," said Kaiser Permanente's Lowensohn. "For example, when the PowerBook came out, we beat it a little more than when the IIfx or the IIsi came out." The company also tested more pieces of software on the PowerBooks, especially more extensions, Lowensohn said.

And, obviously, the PowerBook differed from desktop models by requiring battery tests. Those tests involved measuring how long the batteries lasted during continuous use, for example, as opposed to constant switching on and off, he said.

"The amount you test a machine usually is based on how rock-solid it seems in the initial pokes and probes," Lowensohn said. "If the first things you try work fine, your confidence builds. If you see something early, you're going to spend a lot more time testing." □

Managers focus on interoperability as key factor in buying equipment

By Connie Guglielmo

Switch-hitting hardware preferred at user sites

As networks become more complex, users are discovering the importance of cross-platform hardware and software.

Along with price and performance, add interoperability to the checklist of features that managers responsible for mixed-platform environments are considering when buying new hardware.

Finding ways to share data in companies where Macintosh, IBM PC and compatible, and Unix systems coexist on networks is not a new concern, with managers turning to network gateways, data-translation utilities and cross-platform electronic mail to provide users with a common ground. But new generations of hardware and software (see story, this page) are redefining interoperability, and users are starting to take notice.

Frank Calabrese, manager of personal computing services for Bose Corp. of Framingham, Mass., has more than 1,000 Macs in his care and is very interested in what he calls "multimode" laser printers that will work

with both Macintosh and PC-based systems in networked environments, including Hewlett-Packard Co.'s LaserJet 4 and the new 600-dpi, cross-platform printer that Apple reportedly plans to announce early this year (see MacWEEK, Oct. 19, 1992).

"Interoperable means that I can optimize equipment over the long haul with less chance of obsolescence," Calabrese said. "I've got some Apple laser printers that have been around four or five years that are still being productive. That leads me to believe that any hardware I buy today is going to be around for five years. But five years ago, I didn't know I would have so many Macs. Who knows what platforms I'll be dealing with in five years. With the HP printer, I've got a lot more options because it can handle mixed mode today. If I buy a printer that only works with Macintoshes today, then where will I be in five years? Nowhere."

Calabrese and Phil Hopkins, an information analyst in Pasadena, Calif., for health-care provider Kaiser Permanente, also are evaluating other multiplatform peripherals, such as Iomega Corp.'s Bernoulli storage devices, that can be hooked up to Macs and PCs with a minimum of fuss.

"We are looking at hardware very carefully



BOB RHA

now and finding out if it is cross-platform," Hopkins said. "Something like the Iomega drive could give us a lot of utility because we have large numbers of Macintosh and PC users, and neither one is going to go away."

One manager at Martin Marietta in Littleton, Colo., said there is a growing attraction to hardware, such as the HP printer and Iomega drives, because "we're in downsizing mode, and so we're going to give a good look to anything that will save us money in the future. [Interoperable equipment] may be a more costly purchase now, but in the long term it will be a better investment."

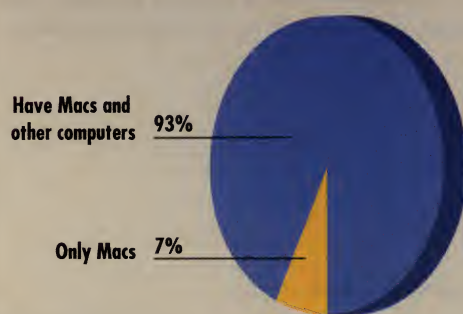
Companies and organizations that have not taken on the question of interoperability may find themselves in a position similar to that of the University of Colorado in Denver. "We are in an environment where we don't specify what gets purchased," said Chris Yoder, information processing equipment specialist for the support center that is responsible for overseeing 5,000 Mac, PC and Unix systems running on AppleTalk and Novell networks.

"We recommend Novell-compatible equipment and have set up gateways between the mail systems so that people can communicate, but it's up to individuals to decide what hardware they want," Yoder said. "They basically buy whatever they want, and we make it work together. That's our job. Interoperable solutions would be nice, but we don't want to let our individual religions about systems prejudice users. If I had my way, everyone would be on Unix because that's what I like." □

Phil Hopkins, an information analyst for Kaiser Permanente in Pasadena, Calif., is considering Iomega's Bernoulli storage devices because they can be hooked up easily to both Macs and PCs.

Multiple platforms

Coexistence of Macs with other computers



Base: MacWEEK subscribers

Virtually all MacWEEK sites are multiplatform locations.

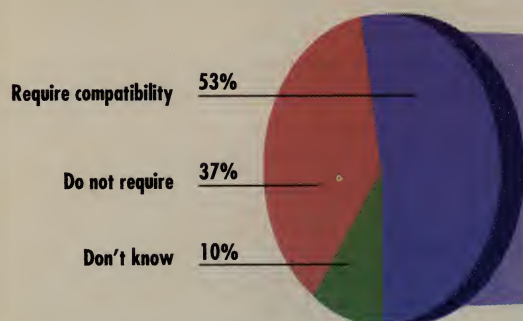
Most common multiplatform applications

	Compatible	Interoperable
Electronic mail	81%	65%
Word processing	87%	59%
Spreadsheets	83%	53%

Base: Have specific applications in use at work site

These sites most often require that E-mail be both compatible and interoperable.

Companies that require compatibility*

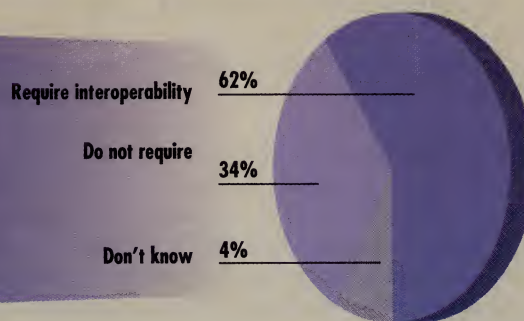


Base: Companies with multiplatform environments

* Compatible: able to read the same data formats on different platforms

** Interoperable: equivalent versions with parallel program functions

Companies that require interoperability**



Base: Companies requiring multiplatform compatibility

Interoperable software tops the buying charts

Making sure that users working on different platforms can share day-to-day business information contributes a lot to the bottom line of software developers, such as Microsoft Corp., WordPerfect Corp. and Aldus Corp., that make versions of their applications for more than one platform.

"In the software arena, there is definitely more of a stress on interoperability, and it does influence our buying decisions," said Tom Mathieu, a project leader for EMSL Computer Support at Battelle Labs in Richland, Wash. "We want to have a standard

suite of desktop applications — calendaring, word processing, spreadsheets — so that users can share files.”

But Mathieu has found that just because applications are available on more than one machine doesn't mean a company's cross-platform problems are solved. “You can get Microsoft Word on Macs and PCs, but it's not available for Unix. And WordPerfect is available for all three systems, but we've found that the files are not completely compatible when you try to transfer them across platform.”

The fact that Frame Technology Corp.'s FrameMaker is available for Macs, PCs and Sun Microsystems Inc. workstations is the main reason that Environmental Systems Research Institute (ESRI), a developer of mapping software already using cross-platform versions of Microsoft Word, recently standardized on Frame's publishing application.

“We have more than 400 Macs, 300 or more Suns, and 250 PCs,” said Todd Novak, a Macintosh technician at the Redlands, Calif., company. “It was just costing too much to buy platform-specific applications and have people try to figure out how to share information. We write a lot of documentation on the different platforms, and the information has to flow easily. That's the reason we went to Frame. Now we try to get software so no one is an island.”

At Harris Corp.'s Communication Systems Division in Palm Bay, Fla., staff engineer David Schulman sees more of a trend toward purchasing of interoperable software. “There hasn't been a lot of thought given to cross-platform issues because our engineering organization is very segregated, and different departments develop for different customer bases, so we don't really talk to each other.

“But users have been taking the bull by the horns and getting into interoperable software, like Word and Excel, so that we talk and have cross-platform productivity standards for sharing spreadsheets, presentations and schematic drawings,” Schulman said.

Kaiser's Hopkins said interest in cross-platform software is “not a top priority, but it's rising quickly.” But he added, “We continue to look at every new category of software, and we would not exclude a unique software product just because it's only available on a single platform.” □

Todd Novak of ESRI said his company recently standardized on FrameMaker for publishing because the program is available across Macs, PCs and Sun workstations.



BOB RIHA

Maintenance, training and support

Companies with full-time maintenance staff



Base: MacWEEK subscribers

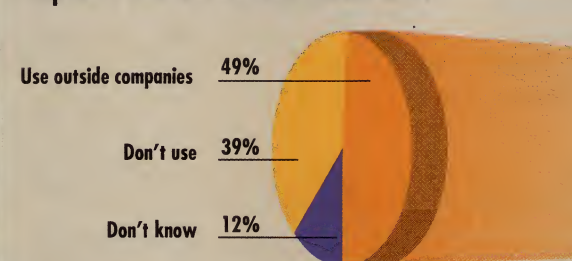
Average number of maintenance staff per computer platform

	Average number
Macintosh	3
Other microcomputers	6
Equally on Macs and other micros	4
Total	13

Base: Have maintenance personnel

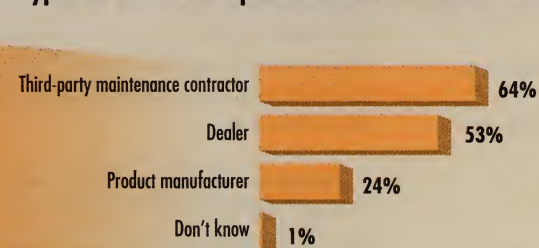
Seven in 10 work locations have full-time maintenance personnel. The average is 13 people, with three dedicated to maintaining only Macs.

Companies that use outside maintenance



Base: Have maintenance personnel

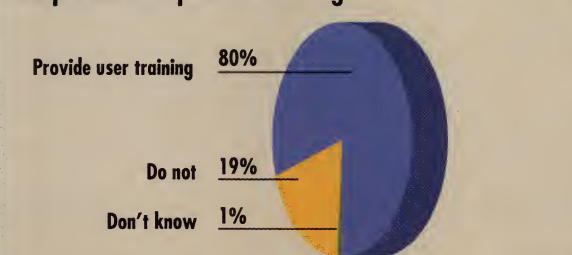
Types of outside companies used for maintenance



Base: Use outside maintenance company

In-house maintenance is frequently augmented by outside companies, usually contractors and dealers.

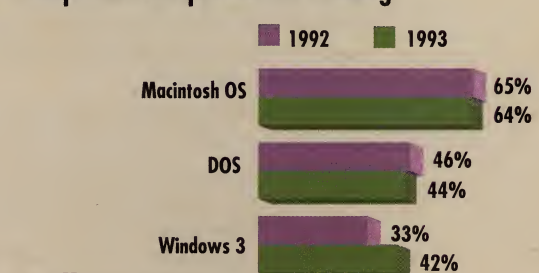
Companies that provide training



Base: MacWEEK subscribers

The vast majority of sites provide users with microcomputer training regardless of platform.

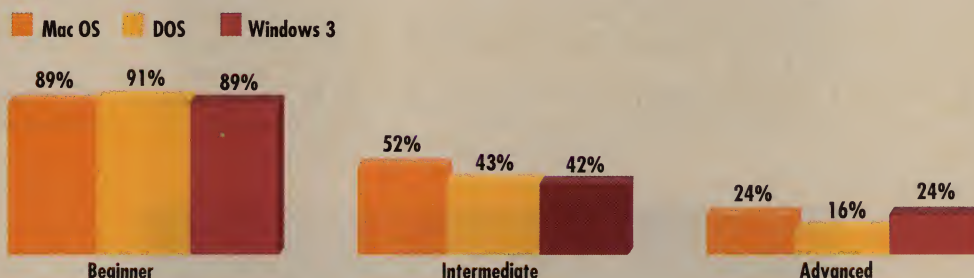
Companies that provide OS training



Base: Have user training

The rise in Windows instruction since last year follows the rise in popularity of the OS itself.

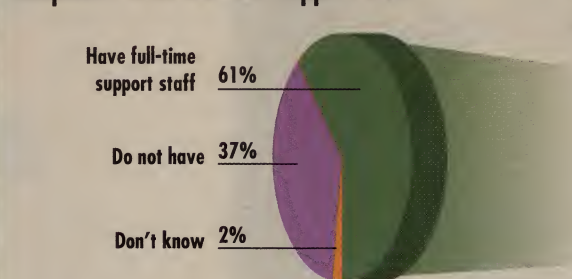
Levels of training by platform



Base: Provide specific operating system training

MacWEEK sites provide Mac and DOS-based operating system training in comparable measure, except at the intermediate level, where Macintosh training is predominant.

Companies with full-time support staff



Base: MacWEEK subscribers

Average number of support staff per computer platform

	Average number
Primarily support Mac users	3
Primarily support other micro users	5
Equally support Mac and other users	3
Total	11

Base: Have user training

Six in 10 work sites maintain a full-time microcomputer support staff. On average these locations have 11 on staff, with three dedicated to supporting Mac end users.

As sites become heterogeneous, AppleShare loses out to NetWare

By Jeff Ubois

Sites with more than a score of PCs opt for NetWare for security, speed and add-on functions.

In the days when Macintosh networks were isolated from the corporate LAN, there wasn't much of a question about how to connect Macs together — users relied on file-server and networking technology supplied by Apple.

But as networks grow in size and interconnectedness, the requirements for linking IBM PCs and compatibles with Macs increase. In the minds of many managers, the AppleShare file-server software has not kept pace with their needs, so sites are switching to Novell Inc.'s NetWare.

NetWare for mixed networks.

While AppleShare still dominates the market for all-Mac networks, Novell's market-leading network operating system (NOS) is edging Apple's less-expensive server out of heterogeneous environments. According to users and analysts alike, NetWare for Macintosh 3.11 offers superior connectivity to PCs, higher performance, fault tolerance options, support for larger numbers of workstations and better security.

"We are starting to see homogeneous networks, like Apple's, being networked into other parts of the corporation that have a PC-compatible component. And to do that you need a NOS that supports both, like Novell's," said Lee Doyle, director of LAN research at International Data Corp., a Framingham, Mass.-based market research company.

"AppleShare is fine for a Mac-only network, or if you want a very limited number of PCs, but it doesn't compete with [Microsoft Corp.'s] LAN Manager or NetWare or [Banyan Systems Inc.'s] Vines, and even Apple wouldn't say that is its target market," Doyle said.

But Apple definitely is part of Novell's target market. "Over the years Novell has

See AppleShare, Page 104

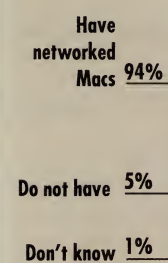
Brian Donovan, network manager at Hambrecht & Quist, a San Francisco brokerage with about 300 Macs, is introducing NetWare into a few workgroups.



ED CALDWELL

Networking

Sites with networked Macs



Base: MacWEEK subscribers

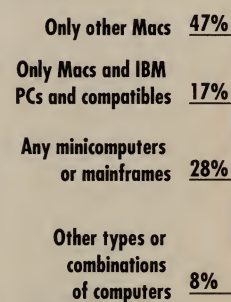
Macs that are networked



Base: Total Macs

Almost all MacWEEK work sites network Macs to other computers for sharing data, software, peripherals or for sending and receiving messages.

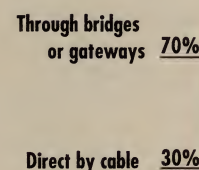
Sites with networked Macs



Base: Total networked Macs

Networked Macs are more likely to be connected to other kinds of computers than only to other Macs.

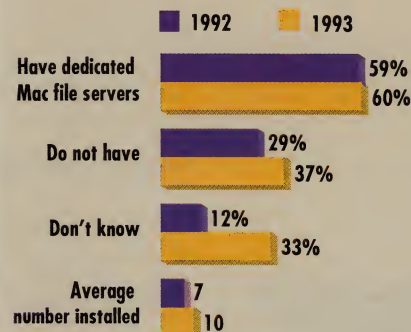
Mac-to-mainframe connections



Base: Macs connected to mainframes or minis

Of Macs connected to mainframes or minis, three in 10 are connected directly by cable while the balance use bridges or gateways.

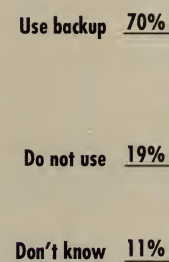
Sites with dedicated file servers



Base: Have Mac networks

About the same percentage of sites have dedicated Mac file servers this year as last year, but the average number installed has risen.

File-server backup



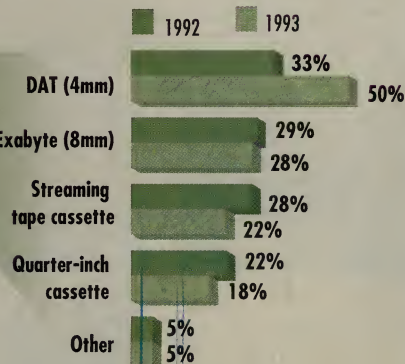
Base: Have Mac file servers

Type of backup



Base: Use network backup for Mac file servers

Tape formats used



Base: Use tape backup

Tape is the preferred medium for Mac network-backup systems.

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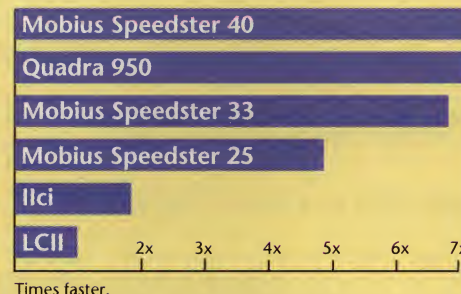
The Mobius Speedster '040 accelerator instantly gives you Quadra performance—a speed boost of up to eight times—while letting you keep your investment in your current Macintosh. The 40 MHz version actually outperforms the Quadra 950. And, you won't have to mortgage the house to get the Speedster, either, with prices beginning at just \$799.

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AppleShare

From Page 102

moved to improve its Mac support, and the support for the Mac in the current, high-end 3.11 product is pretty good," Doyle said.

Independent decision makers. Users offer a variety of reasons for moving from AppleShare to Novell.

"We are phasing out AppleShare and replacing it with NetWare because we've found AppleShare is not very manageable in a large environment," said Guy B. Falsetti, senior computer consultant in the Weeg Computing Center at the University of Iowa in Iowa City. "It worked in small groups, but it just didn't lend itself to some of the things we are accustomed to in accounting and support of different environments.

"Our goal is to provide virtual connectivity so that [users] can sit at their workstation and get to the devices they want from anywhere in our campus or anywhere in the world connected to the Internet. Novell has been very instrumental in how we implement all that," Falsetti said.

He said the move to NetWare also was driven by the need for multiple network protocols, faster performance and security.

"The demand for multiprotocol support came from people wanting to expand the area they could communicate with," Falsetti said. "It is essential for us to support a wide variety of machines, and we use Novell to route IP (Internet Protocol) packets, IPX (Internetwork Packet Exchange) and AFP (AppleTalk Filing Protocol) between our various networks."

New applications and larger numbers of machines attached to the network are making performance improvements and better security necessary, Falsetti said.

Brian Donovan, network manager at Ham-

brecht & Quist Inc., a San Francisco brokerage with about 300 Macs, is introducing NetWare into a few workgroups within the company. "We are mostly looking for speed and performance," Donovan said.

Falsetti said: "The security aspect of Novell is very important to us. We are tying into Novell's 3270 gateway and using its features to do validation of users because Novell supports Mac, Windows and DOS clients all on one communication server."

Administration's no breeze. Novell isn't the right choice in all situations. "Novell's complexity is its downside; it's not something a small shop could jump into," Falsetti said.

"When we had less than 20 stations and were doing single-platform support, then AppleShare worked pretty well," Falsetti said. "Somewhere up around 20 stations, and when we started looking for multi-protocol support, was where Novell really started to shine."

Hambrecht & Quist's Donovan isn't planning to eliminate AppleShare altogether. "AppleShare is a lot easier to set up, and it's a lot easier from a training point of view for a department person to administer," he said. "It's also infinitely easier and more manageable on the Apple portion of our network because we are dealing with AppleTalk protocols rather than non-AppleTalk protocols."

Donovan has hit a few minor problems. As a result, he said, "We are setting up barriers between the Apple and Novell portions of the network until we get final controls in place."

Maintaining a mix. Many sites are looking to NetWare to provide superior connections to DOS environments,

Arguments in AppleShare vs. NetWare

- ▶ **Capacity.** AppleShare is said to handle up to 120 users; NetWare for Mac is available in a 200-user version.
- ▶ **Security.** NetWare, though not without its well-known flaws, is much more secure and flexible than AppleShare.
- ▶ **Interoperability.** AppleShare can have DOS-based computers as clients, but only through Farallon Computing Inc.'s PhoneNET Talk PC. NetWare is the operating system linking most networked PCs already.
- ▶ **Price.** AppleShare 3.01 costs \$1,199 for 120 users, which is well below NetWare for Mac's \$6,990 list price for 100 users.
- ▶ **Ease of use.** NetWare has poor Mac-management tools and is far more complex overall than AppleShare.

particularly for printing and backup.

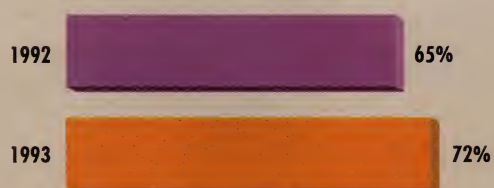
"We used to have straight AppleShare servers, but we wanted to consolidate to one server to share electronic mail, files and printers," said John Clarke, director of computer services at the Graduate School of Management at the University of California at Irvine. "Also, our backup strategy is incremental, and now we don't need to use different media for different servers.

"NetWare gives us facilities for printing to LaserWriters using NetWare queues that throw open LaserWriters to all DOS clients," Clarke said. "All print jobs go by way of the print queue, so we can reorder, delete and manage the print queue with the tools Novell provides."

At virtually every MacWEEK reader site, Macs coexist with a variety of DOS-based computers, and these same Macs are networked to a very high degree. These conditions seem like prerequisites for choosing NetWare over AppleShare, despite cost and ease-of-use differences. □

Software administration

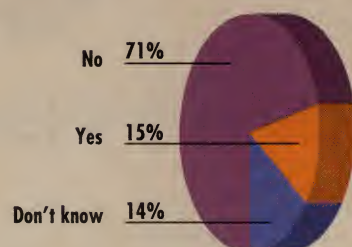
Companies that track licensed applications



Base: MacWEEK subscribers

More sites this year track their use of licensed software than last. Most managers check invoices or physically examine the Macs to see what applications are installed.

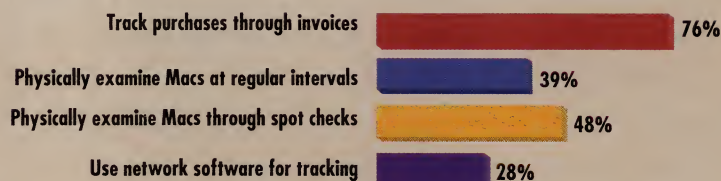
Companies that use real-time tracking software



Base: Track licensed applications on network

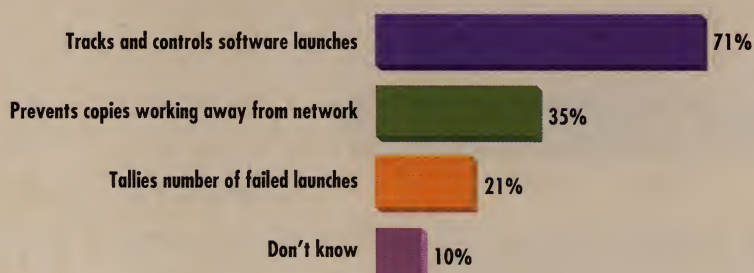
Only a minority of companies use real-time network tracking software. Real-time tracking functions are most often applied to software launches.

Tracking procedures used



Base: Track licensed applications

Real-time tracking functions performed

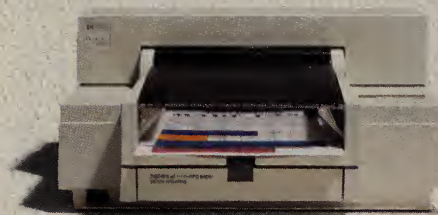


Base: Track applications in real-time

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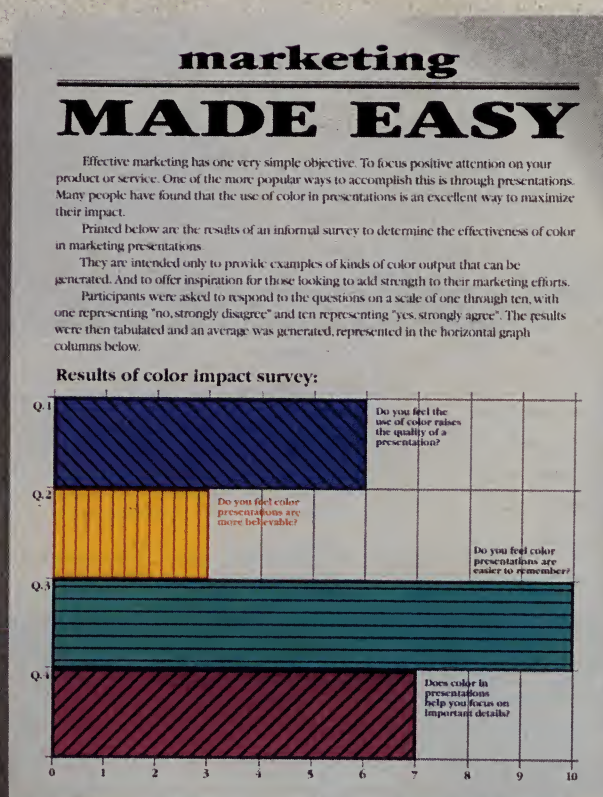
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Reviews

- ▶ PostScript color inkjet printers. See Page 122.
- ▶ FastTrack Schedule. See Page 126.
- ▶ 1992 Reviews index. See Page 132.



MicroStation ups ante for Mac CAD

New version packs workstation power

By Timothy E. Johnson

Autodesk Inc.'s AutoCAD is the mostly widely used CAD program on DOS machines, and it has been considered the "top end" on the Macintosh. But few people recognize Intergraph Corp.'s MicroStation as the more popular CAD

choice on minicomputers and Unix workstations.

In 1987, Intergraph moved MicroStation over to the DOS and Mac markets in its bid to topple AutoCAD on the desktop front. The latest release of MicroStation Mac, Version 4.2, is a complete makeover that brings the program up to par with the power of Intergraph's workstation versions.

MicroStation Mac exactly matches its workstation cousins — right down to its use of the Motif graphical interface. Motif's dialogs and palettes behave like the Mac's, so you'll quickly forget that Intergraph has replaced the standard Macintosh interface with gray, 3-D windows. The program preserves the Mac menu bar, so you can switch to your desk accessories and background programs.

This program gives you workstation power and depth, as well as a few surprises. MicroStation is a customizable 2-D/3-D CAD system that supports networking, relational databases, macro and application programming, workstation and IBM PC file formats, NURBS (nonuniform rational B-splines) surface modeling, rendering, and fly-through animation.

Popping out. The big surprises are the program's speed and alternative 3-D presentation format. MicroStation Mac redraws and zooms faster than any other Mac CAD program we have used, without scrimping on accuracy.

You will have to invest large chunks of time to master this program, however. MicroStation's unusual snapping conventions for previewing placements affect the program's architecture and learning curve.

Most CAD programs dynamically snap the cursor to the nearest object, but MicroStation Mac snaps only when you click while pressing the Option key. Clicking repeatedly cycles through the various placement possibilities for any overlapping elements.

The possibilities are surprisingly limited. You can snap only to the nearest point or key points, such as end points, intersections and object centers, either in the drawing plane or through the third dimension.

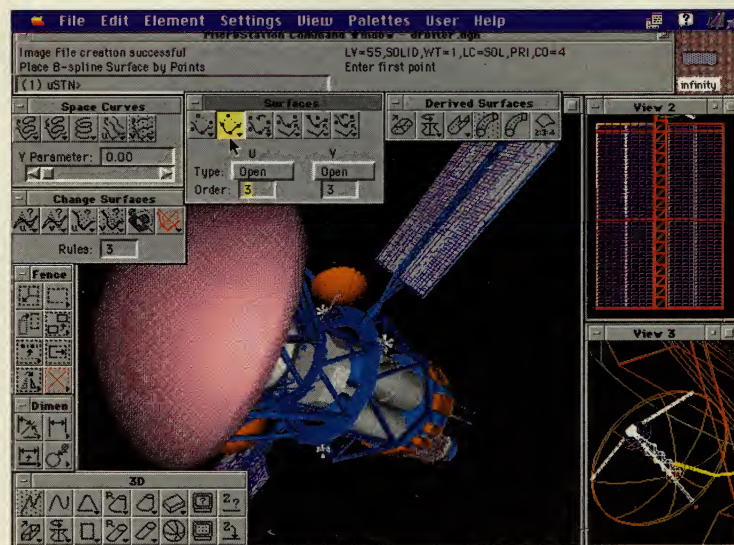
Other constrained placements, such as tangents and perpendiculars, are built with tools (instead of

snaps), and the number of tools is huge. For example, there are 14 tools just for constraining lines.

You'll want to keep many of the tear-off tool palettes open so you can remember the tool choices. This approach places a premium on screen space and stretches the learning curve, but it also makes it possible to strike any geometric construction.

MicroStation Mac may take weeks to learn, but your productivity will soar once you divine the purpose and location of all those tools. For example, the 2-D Wall tool draws up to 16 parallel lines at a time, and each line can have a dif-

See *MicroStation*, next page



Shown here is a perspective of a space station, with two wireframe orthogonal close-ups. All the tool palettes for creating and editing 3-D surfaces are shown along with the Dimension and Fence palettes. The bottom palette holds the tools for creating 3-D primitives. The remaining palettes manipulate NURBS surfaces.

Norton Essentials overcome PB limitations

NEP keeps PBs charged and in sync

By Dale Coleman

Battery-charge conservation and file synchronization are two of the hottest topics among most PowerBook users. Norton Essentials for PowerBook 1.0, an integrated collection of utilities from Symantec Corp., addresses both of these issues in a way that should satisfy the needs of both the casual user and the more technically literate. The \$129 program also includes productivity-enhancement features to overcome some of the PowerBook's design shortcomings, such as disappearing cursors on PowerBooks with supertwist displays and the unfortunate Caps Lock key.

Inspired by Guy Kawasaki, Norton Essentials for PowerBook (NEP) was developed and marketed by After Hours Software as GUM (Guy's Utilities for Macintosh) PowerBook edition. Symantec purchased the product from After Hours and rechristened it a few weeks before its introduction.

Installation. You can access NEP's features in several ways. The package installs as a control panel with 12 Power Panels. It also installs an icon in the right portion of the menu bar. This pull-down menu summons the control panel and displays indicators for power source, AppleTalk status, time and

date, as well as Power Panels for six of the most frequently used features. This setup may seem complicated, but NEP provides a method of accessing each feature that will suit most users.

Right to battery life. All battery-charge conservation elements have three settings: A/C Power, Battery and Low Battery. NEP monitors your power source and switches to the appropriate mode automatically.

The Low Battery setting can be extremely useful. When the battery charge reaches a power level that you define, it automatically switches to draconian power-conservation techniques that you also can define.

PowerBook display screens are the

major power consumers. To counteract this, NEP lets you control backlighting in several ways: You can use either a menu or keyboard command to dim the screen; set NEP to dim the screen at predefined intervals of from five seconds to three hours; or tell NEP never to dim the screen. (With current screen technology, it's probably best to set the screen to dim after a few minutes to prevent temporary screen ghosting.) To further conserve battery power, you can set NEP to dim the screen during start-up.

Other power-saving techniques, such as spinning down the hard disk, putting the system to sleep and resting the processor, also are cleverly implemented. You can spin down

See *Norton*, Page 110

score card

MicroStation Mac

Intergraph Corp.

Version tested: 4.2

List price: \$3,450*

Overall value ♦♦♦♦

MicroStation Mac brings workstation CAD power and speed to the Mac. The graphical interface, based on X Window System's Motif, is fluid and Mac-like. The exhaustive tool set will take weeks to learn, but there's a tool for every task. The NURBS (nonuniform rational B-splines) surface tools make it easy to mate and mold arbitrary surfaces. A hole-cutting tool projects a closed curve onto a surface and cuts a hole at the intersection. Reference files allow overlay and masking of drawings, and hooks are provided to Oracle databases. MicroStation Mac also flawlessly reads and writes 2-D and 3-D DXF (Drawing Interchange File), and it renders files containing solid models in AutoCAD's native format — the only program to do so reliably. The program is hampered by a copy-protection dangle, which, in our opinion, is unnecessary given the product's scope and complexity.

Performance ♦♦♦♦

Features ♦♦♦♦

Ease of use ♦♦♦♦

Documentation/support ♦♦♦♦

*Upgrade from Version 3.6, \$500. Technical support: \$600 per year; \$750 per year for multi-user sites.

R A T I N G S K E Y

- ♦♦♦♦ Excellent
- ♦♦♦♦ Very good
- ♦♦♦ Good
- ♦♦ Fair
- ♦ Unsatisfactory

score card

Norton Essentials for PowerBook

Symantec Corp.

Overall value ♦♦♦♦

Version tested: 1.0

List price: \$129

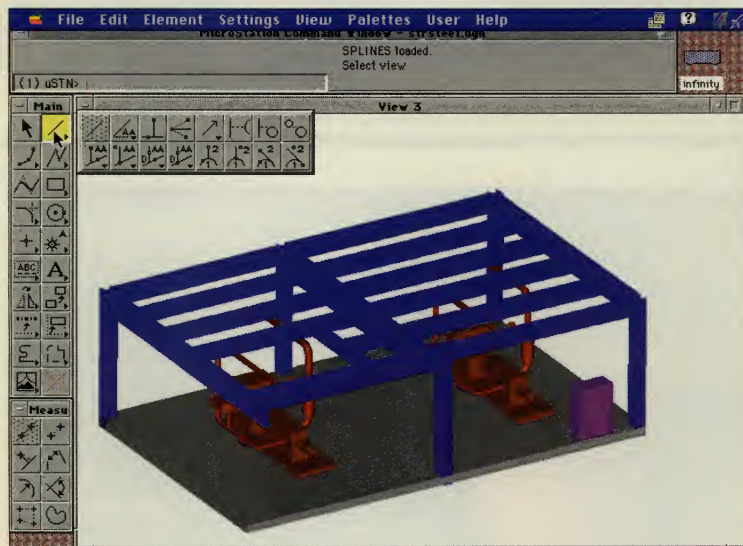
Norton Essentials for PowerBook, originally developed by After Hours Software as GUM (Guy's Utilities for Macintosh), is a sophisticated and cleanly implemented set of utilities that addresses two areas of concern to PowerBook users — battery-charge conservation and file synchronization — while adding other PowerBook-specific productivity enhancements. The package installs as a control panel, which also is readily accessible from an icon on the menu bar. You can add status indicators to the menu bar for such elements as AppleTalk, battery charge or remaining time. As with other utilities of this type, many of the settings can be achieved through manual operations, but Norton Essentials does a very good job of automating the process.

Performance ♦♦♦♦

Features ♦♦♦♦

Ease of use ♦♦♦♦

Documentation/support ♦♦♦♦



This axonometric view of a pumping station also shows the main tool menu with the single-segment line tools extended. Fourteen of the 16 line tools are for developing tangencies and perpendiculars since the snap doesn't compute either constraint. There is a similar set of tools with each of the other primitive tools.

MicroStation

From previous page

ferent graphic style and weight. Other tools neatly trim and join intersecting walls.

The net worth. Network productivity also gets a boost with MicroStation. You can attach up to 255 remotely located drawings as rotated overlays and mask out the unwanted areas. You can snap to elements in these reference images, but you must open the original file if you wish to change a referenced object. Referencing the same 3-D drawing at different scales produces several related views of the same object.

MicroStation Mac also has tools for linking your drawings with Oracle Corp.'s Oracle relational database that runs on Macs, IBM PCs and compatibles, and workstations. These tools let you establish database links, pose queries using SQL, generate reports, and perform graphic and text operations on your drawings based on your database search criteria.

The 3-D perspective. MicroStation Mac normally shows top, front, side and isometric wire-frame views when you begin working in 3-D, but you can easily change this default to include perspectives. All views update continuously as you draw, and not just on the final mouse click. Your mouse movements are usually constrained to a plane parallel to the active window, but you also can constrain the cursor to a tilted drawing plane.

MicroStation Mac has all the necessary tools for creating 3-D surfaces. You can develop forms from 2-D shapes by extruding bases, revolving armatures, skinning sections, extruding curved tubes or draping meshes over curves in space. Or you can use one

of the eight primitive tools for directly forming 3-D objects.

MicroStation represents surfaces as NURBS because they economize on storage and limit edits to a small area. NURBS are defined either by a mesh of points that lie on a surface, or a series of control points that define tangencies. If your data points aren't placed precisely, you first can define the surface's "stiffness" and then click on the data points. The program then produces a surface that minimizes the distances to each point based on your stiffness parameter.

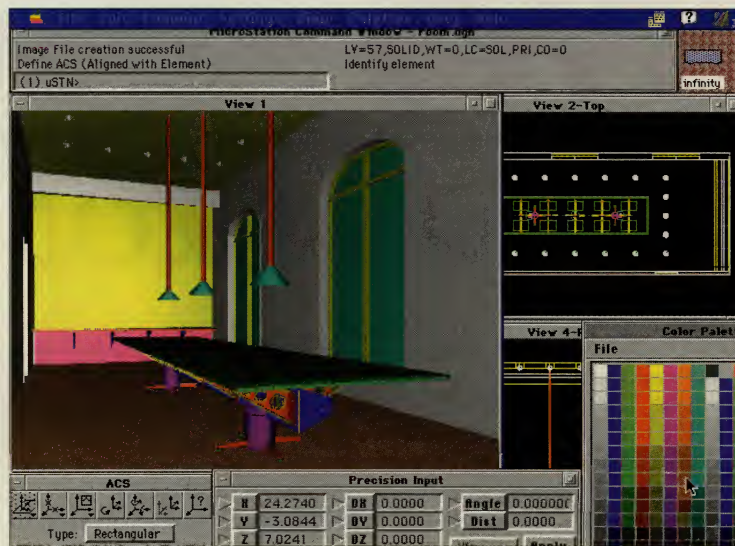
You'll find several tools for seamlessly patching surfaces together. The Edge Extract tool pulls an edge from an existing surface to use in a new surface definition. The Modify tool lines up adjacent edges and matches tangencies across boundaries.

The most powerful tool will project any closed curve onto a selected surface and cut a hole at the intersection, like a cookie cutter. MicroStation is a surface modeler, rather than a solid modeler, so there is no way to carve one object with another except by using this tool.

Rendering. After years of neglecting presentation, 3-D CAD vendors suddenly find themselves competing over rendering capabilities. MicroStation Mac 4.2 has pulled far ahead of other high-end CAD programs, such as AutoCAD.

You can choose among seven different presentation formats: wire-frame, hidden line (with true profiles), cross-section, simple shading, Gouraud shading, Phong shading and stereoscopic separations formerly confined to second-rate monster movies. The renderer lets you fence off segments of the projection for rendering in different qualities.

(For a real treat, you can choose the program's unique stereo-separation format for rendering,



MicroStation Mac develops shaded interior perspectives without gapping joints or wrapping rearward surfaces into the foreground. Several spotlights were used to illuminate the shadowless scene. The Precision Input window at the bottom is an example of a Motif dialog box, which is used to key in either absolute or relative dimensions.

put on the furnished pair of red-and-blue glasses and see your designs leap out of the screen in 3-D monster-movie style.)

Motion. With its tools for composing walk-throughs, MicroStation Mac will spark your interest in animation. The program saves animation segments as Autodesk FLI ("flick") animation files, using any of the seven rendering formats. Intergraph includes a movie editor and player for this DOS format that also lets you save animations as sequential PICTs, which can be read and edited by many Mac animation and

QuickTime-editing applications.

The shaders work with a variety of lighting sources. The Diffuse, Point and Spot lights behave as expected, but we found that the single Sun light source didn't shine. (Intergraph said it is working on a fix.)

None of the lights cast shadows, and you can't map textures onto objects, but the renderings precisely depict surface attributes. You'll have to export your design as a RIB (RenderMan Interface Bytestream) file or DXF (Drawing Interchange File) to another renderer if you want photo-realistic results. Intergraph said it has no plans for port-

ing ModelView, its high-end renderer, to the already crowded Mac rendering market.

Symbols. Both 2-D and 3-D symbols are well-implemented in MicroStation Mac 4.2. Symbols are listed by name and accompanied by a thumbnail. You can use them either as an instance or as a copy: Instances will update when you change the master, while copies ignore any changes to the original.

Double speed. MicroStation Mac is a speed demon that relies on double-precision integer arithmetic. The design space is 32 bits on a side, which translates into a theoretical accuracy of one part in 2 billion. This is plenty for architects and most engineers, but not enough for working with large geographic areas.

The program lets you increase your drawing limits when you decrease coordinate accuracy. We found accumulated dimensions were only accurate to six decimal places — not the eight places Intergraph claimed — when using typical engineering drawing extents.

Standard of exchange.

MicroStation Mac has achieved what other CAD programs falsely claim: a file exchange standard for companies with mixed platforms.

You can exchange AutoCAD files dependably: Not only does the program read and write DXF files pre-

See *MicroStation*, Page 116

IN BRIEF



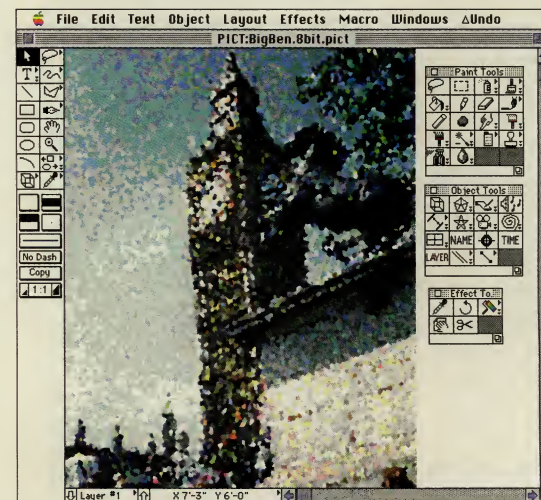
ToolPAKs for Canvas

Plug-ins extend design, imaging, utility features

One reason Canvas is so popular is the ease with which you can add to its feature set through the use of plug-in modules.

Deneba Software demonstrates the power of this technology with its release of more than 40 plug-in tools in three separate packages: Design, Imaging and Utility ToolPAKs for Canvas.

Utility ToolPAK. Utility ToolPAK contains the following plug-ins, or "external tools" as they are known in Canvas: Fine Kern, Font Lister, GIF I/O, Imported Filters, Macro Window, Menu Palettes, Object Data I/O, Photoshop I/O,



The Imported Filters external tool in the Utility ToolPAK lets you use Acquire and Effects filters from such programs as Adobe Photoshop. Here we have applied Photoshop's Crystallize filter to a photograph of Big Ben from within Canvas.

Style Sets, Text Utilities, Tool Loader and Undo Killer.

Four tools in Utility ToolPAK increase the functionality of text and type handling in Canvas. Font Lister lists all the fonts used in a document, a useful capability when working with a service bureau. Fine Kern lets you apply custom kern values.

Text Utilities, a revision of an existing tool, adds the capability to flow text in a way similar to that of Aldus PageMaker: An arrow at the bottom of a text block indicates that there is more text to flow; when you click on the arrow and then again

on your document the additional text is placed.

The Style Sets external tool lets you create style sheets in Canvas, a welcome addition, but it operates in a rather convoluted fashion. You can't simply select New to create a new style; instead, you must rename the last used style and edit its specs.

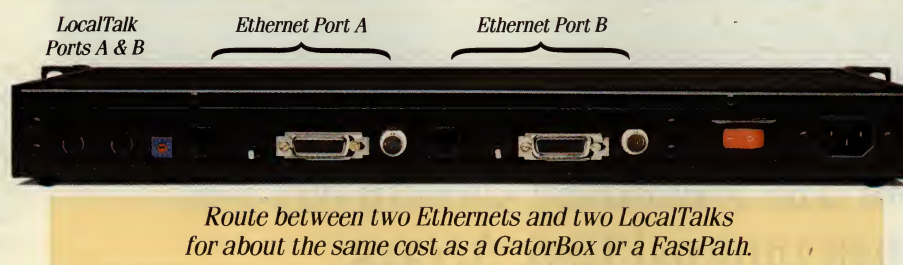
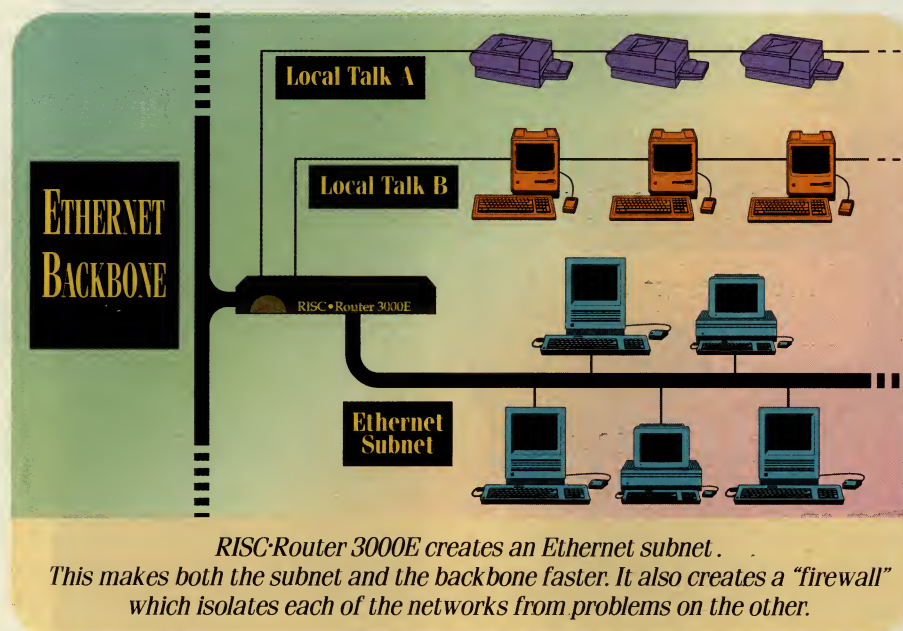
Imported Filters lets you import Acquire and Effects filters from other programs, such as Adobe Photoshop. Loading them is a snap. You just choose Configure from the Acquire Image submenu, which calls up a dia-

See *ToolPAK*, Page 118

Give your network a future.



RISC Router 3000E Ethernet-to-Ethernet Router, with 2 LocalTalks, \$2995.



Route between two Ethernets and two LocalTalks for about the same cost as a GatorBox or a FastPath.

Q: Why does my network need Ethernet-to-Ethernet routing?

A: Performance and reliability. By using a RISC Router 3000E to link an Ethernet subnet to a central backbone network, you can reduce network traffic on both sides of the router.

Q: How does RISC Router 3000E give my network a future?

A: It gives you an upgrade path. RISC Router 3000E includes two LocalTalk ports, and can be installed for about the same cost as an Ethernet-to-LocalTalk router like the GatorBox or FastPath. As your Macintoshes on LocalTalk require additional network speed, you can simply upgrade them to Ethernet and connect them to RISC Router 3000E's Ethernet subnet.

Q: Does the RISC Router 3000E support the standard set of features I've been using on my Ethernet-to-LocalTalk routers?

A: Absolutely. And more! It supports AppleTalk Phase I and Phase II, TCP/IP and DECnet, MacTCP, atalkad, AppleTalk in IP tunneling, RIP, SNMP, and our own Advanced Network Security Protocol (ANSP™*).

Q: What advantages does the RISC Router have over other Ethernet-to-Ethernet routers?

A: Macintosh based management tools. A Macintosh-aware feature set, with ANSP™ and Ethernet-to-Ethernet tunneling. Support for thick, thin, and 10BaseT Ethernet on each Ethernet port. Dazzling performance, and a very aggressive list price.

Q: How can I get more information, and complete technical specifications?

A: Call us toll free at 800-356-0283. We'll be happy to send you complete information on RISC Router 3000E, and our other Macintosh Ethernet products.

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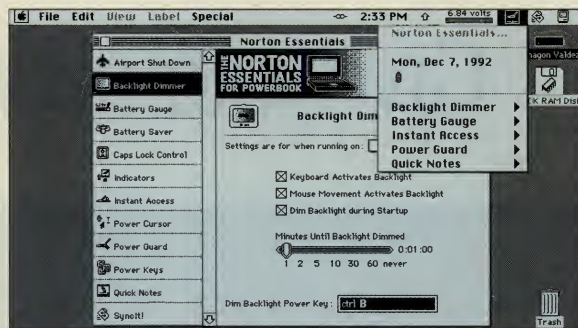
Norton

From Page 107

the disk or put the system to sleep with a keyboard or menu command at any time. And, in addition to the three power settings mentioned earlier, NEP lets you control many of the settings according to the application you're running. It includes default settings for a few popular applications, and you can add to the list easily. This feature takes into account the fact that some applications regularly access the

disk, while others are completely or mostly RAM-based. This means that you can set NEP to automatically spin down the hard disk after a short interval when you're running RAM-based applications, but have it wait several minutes to spin down the disk when running non-RAM-based applications.

NEP includes six battery-charge indicators, including one that displays battery voltage. Other indicators give the status on estimated time remaining and percentage of



Norton Essentials for PowerBook's many options are easy to access. The control panel includes rationally organized panels for each function. A configurable menu allows access to key functions of the program, and you can display icons for AppleTalk status, date and time, Caps Lock status, and battery charge (in any one of five display types).

Disk Array•040!

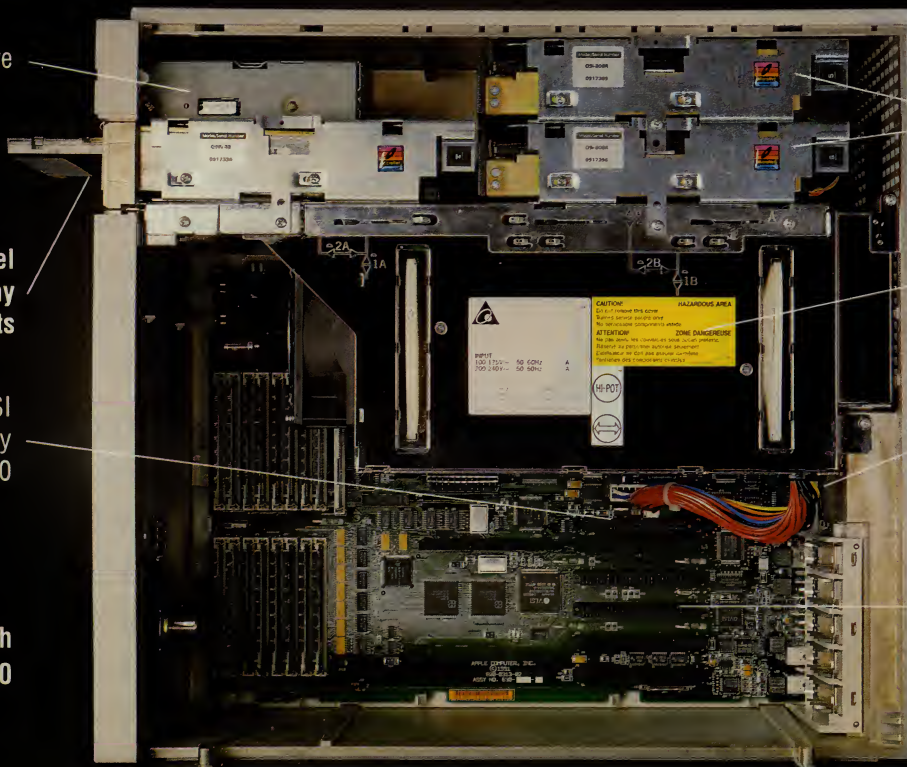
Floppy Drive

Removable Media Drive

MicroNet's Bezel With Disk Array Activity Lights

1st Built-in SCSI Port Used By Micro/Raven•040

Macintosh Quadra 900/950



MicroNet Raven•040 Disk Array

300 Watt Power Supply

2nd Built-in SCSI Port Used By Micro/Raven•040

PDS Slot And All NuBus Slots Are Left Open For Other Use

SAY 'NO' to SLOW – See Latest Raven•040 Disk Arrays – MacWorld/Expo – Booth 2307

High Performance Storage For The Macintosh Quadra 900/950 MicroNet's Raven•040 Internal Disk Arrays

MicroNet's RAVEN brought unbeatable disk array performance to the Macintosh II. Now there's a more powerful Macintosh. The Quadra 950! It's based on 68040 technology and it's fast. The performance of the Quadra can be greatly increased by use of a MicroNet RAVEN•040 disk array.

The RAVEN•040 is a two-drive array employing FAST-SCSI-2 technology. With sustained data transfers of 9.2 MBytes/sec, average access times as low as 4 ms, these new storage systems are six times faster than standard hard disk drives. Available as internal or external systems with capacities from 642 to 5,560 MBytes.

The RAVEN•040 was designed to use the built-in SCSI ports of the Quadra 900/950. The PDS and all five NuBus slots remain open for other use.

The RAVEN•040's built-in performance makes it ideal for graphics, animation, pre-press, digital sound, multimedia, and CAD/CAM, where speed and capacity are paramount.

The RAVEN•040 is the ultimate data storage system for Quadra 900/950. No one can match the power of the RAVEN•040.

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AppleLink: MICRONET.SLS • Compuserve: 76004,1611

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charge remaining. (Since the way you use the system over the course of a battery charge can change, projecting remaining time is tricky. NEP provides an analysis of battery usage that shows current charge and depletion rate in addition to estimated usage remaining.)

We give NEP excellent marks for battery-charge management. It's accessible to the casual user without sacrificing the fine-tuning control that many serious users demand.

AppleTalk status. AppleTalk also consumes power, and PowerBook users are familiar with turning it off to conserve batteries. Unfortunately, to turn AppleTalk on from a PowerBook you have to restart the system. NEP addresses this situation nicely with its Instant Access feature. Instant Access monitors the AppleTalk serial port; you can set it to turn off AppleTalk when the AppleTalk connector is removed. When you need to reconnect to the network, Instant Access re-establishes the network connection and mounts all specified volumes.

We ran into one problem with this auto-sensing feature of NEP and a PowerBook Duo 230, which has only one serial port. If you do not have an internal modem and wish to use the Duo's serial port for a modem connection, you must turn the Instant Access feature off or your communications package won't recognize the modem connection. (We even had a few instances where we had to turn off NEP totally in order to use our external modem.)

We have experienced some crashes when printing on a PowerBook 140 and have heard reports from other users, but Symantec could not confirm our suspicion of a lurking bug or a conflict with other extensions in this module.

Synchronization. Developing a file-synchronization scheme can be difficult, mostly because of the variety of ways users work. Some schemes are poorly implemented or complex; others are too rigid. We found the NEP approach, called SyncIt!, just right. You specify which two folders to synchronize, then save them as a named set that is added to the SyncIt! menu. NEP lets you create any number of sets.

SyncIt! makes good use of aliases, so you can place aliases of your files from many folders together into one folder. You also can use SyncIt! as a simple backup utility to create floppy disk backups of important files when you are traveling. If losing your PowerBook is a lesser catastrophe than losing your files, you'll find yourself using SyncIt! this way with great regularity.

SyncIt! has an undocumented use, too. Users with 4-Mbyte PowerBooks probably give little thought to RAM disks. We experimented with using a very small RAM disk to store active files, which we occasionally syn-

See Norton, Page 112

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MAXA

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Norton

From Page 110

chronized to the hard disk. When using RAM-based applications, we were able to keep the hard disk spun down except when synchronizing, thus extending our battery-charge life.

The usable utilities. There are more issues to PowerBook life than battery tweaking and file synchronization, and NEP addresses many of these.

The backwardly named Airport Shut Down feature is actually an abbreviated start-up sequence designed to prove to the airport security staff that your gray plastic carry-on is indeed a Mac. Rather than wait several minutes while the PowerBook starts up and loads all your extensions, you can use Airport Shut Down to make the Mac display a message (to which you can add your name) as soon as the NEP extension loads. Then you can click the Shut Down button. If security is still doubt-

ful, you can click the Continue button to start up the PowerBook in the normal fashion.

A simple security scheme called Power Guard blanks the screen when you put the PowerBook to sleep and requires a password when you awaken the system or on start-up. Power Guard is designed to deter only the casual snooper, however; a determined intruder still can access your system by starting up from a floppy.

NEP provides alternatives to all the standard

cursors, which is helpful for users of PowerBooks with difficult-to-read supertwist displays.

Another utility, Quick Notes, is designed as a place to store those small snippets of information, such as credit card numbers, that you need to keep track of when on the road. (You can password-protect this data as well.) And the Caps Lock Control feature gives you excellent control over the otherwise unruly PowerBook Caps Lock key.

Documentation and support. NEP is so well-designed that documentation is not necessary, but the 60-page manual is well-written. It fails to mention, however, that if you install NEP on a desktop Mac, only SyncIt! is installed (which is useful for those who want to control file synchronization from their desktop Macintosh). When we called technical support, our questions were answered promptly.

NEP and CPU. A predecessor to NEP, Connectix PowerBook Utilities (CPU) from Connectix Corp. of San Mateo, Calif. (see MacWEEK, Sept. 28), was released last fall. CPU offers no file-synchronization feature, but otherwise both products address basically the same needs, with much feature overlap. However, NEP has no equivalent to CPU's KeyboardPower feature, which gives you drop-down menus and keyboard control of menu commands. NEP also lacks CPU's keyboard control of screen brightness.

The NEP interface, however, is superior to CPU's by almost every measurement. CPU forces you to call up its control panel through the Apple menu, while the NEP control panel is always as close as the menu bar. NEP's three power-source settings are easy to set up and use while still accomplishing the stated goal automatically. By contrast, CPU's complex Users and Sets scheme, while possibly more flexible, strikes us as overkill. We wouldn't want to use a PowerBook without one or the other of the utilities, but we generally prefer NEP to CPU.

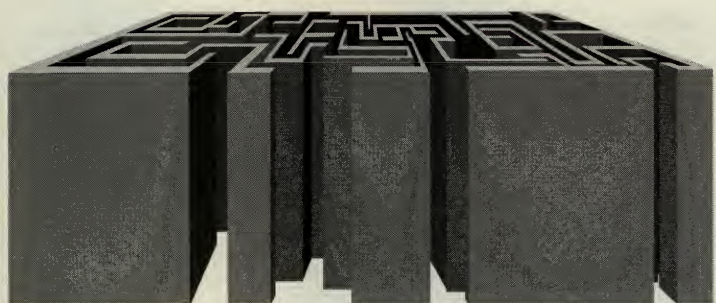
Conclusions. By design, NEP addresses many PowerBook limitations, both in hardware and system software. Power conservation will remain extremely important to most PowerBook users until batteries with much longer charge lives are economically feasible. And until the Mac operating system addresses such issues as file synchronization, this too will remain important to PowerBook users. NEP addresses each of these admirably.

Unless your PowerBook is your only computer and you never remove it from your desk, you won't regret your NEP investment.

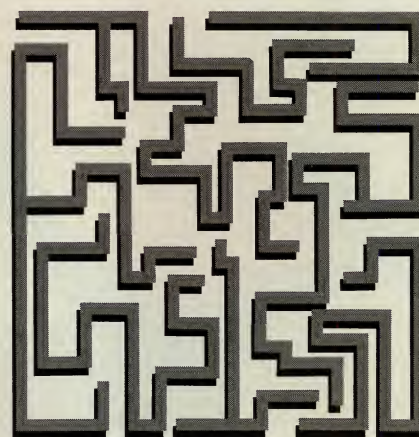
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SYSTEM 7 COMPATIBILITY

Norton Essentials for PowerBook 1.0

Balloon help	No
TrueType	n/a
Publish and subscribe	n/a
Apple events	No
32-bit addressing*	Yes

*According to vendor.

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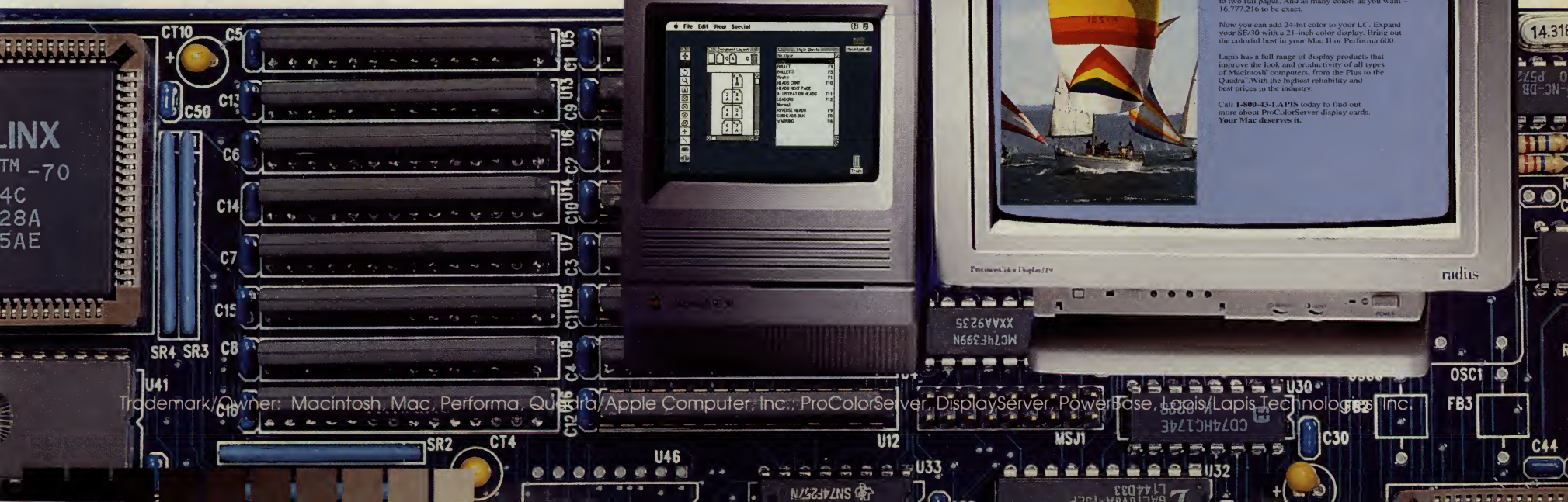
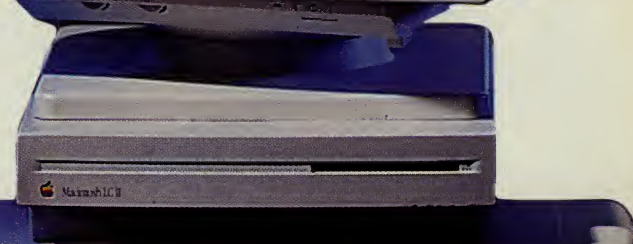


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(32,768 colors)
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SE/30	◆	◆	◆
Performa 400	◆	◆	◆
Performa 600	◆	◆	◆
Mac II/Quadra	◆	◆	◆

ProColorServer display cards are available in 8-bit, 8•16-bit, and 8•16•24-bit versions, and support monitors from 13" to 21", with resolutions ranging from 640 x 480 to 1152 x 872. Lapis also offers a full line of DisplayServer™ and PowerBase™ monochrome display adapters for all Mac systems ranging from the Plus to the Quadra.



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CAPACITY: 128 MB
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Optical Performance Tests												
Overall Fastest												
Color Key	Duplicate (in seconds)	Write (in seconds)	Read (in seconds)	Open Photoshop (in seconds)	Save Photoshop (in seconds)	Open PageMaker (in seconds)	Save PageMaker (in seconds)	Reopen Backup (in seconds)	Overall	Rank	Model	Capacity
Fastest	33.49	18.29	17.88	27.77	23.75	46.66	62.4	461.0	42.2	1	Pinnacle Micro PMO-650 (PI)	128 MB
Percent slower than fastest	44.72	26.60	19.11	32.25	28.64	49.61	106.8	564.4	42.1	2	PLI Infinity Max Optical (MI)	128 MB
Up to 10%	47.19	33.98	18.91	36.64	35.91	50.90	142.9	570.81	43.1	3	MacDirect NuDesign Optical (MO)	128 MB
11%-20%	48.11	33.40	15.74	37.99	36.51	52.35	128.8	568.3	40.8	4	Liberty Systems 115MO (MO)	128 MB
21%-29%	47.58	33.68	15.79	36.77	36.33	51.14	145.6	570.41	38.0	5	DGR Technologies 128REM (MO)	128 MB
30% or more	48.59	34.57	15.81	36.62	36.15	51.56	145.6	571.91	45.2	6	Ocean Microsystems Vista 128 (MO)	128 MB
	48.13	34.15	15.68	36.86	36.34	51.81	146.5	572.81	36.1	7	MacProducts Magic 128 REM/MO (MO)	128 MB
	48.17	33.85	18.11	36.99	35.99	52.16	147.3	569.91	40.7	8	Mirror Technologies 128MB Optical (MO)	128 MB
	48.25	33.74	18.41	37.35	36.68	52.16	147.5	568.91	42.4	9	Generation Systems 128MB Optical (MO)	128 MB
	49.95	31.89	21.86	38.16	31.13	62.93	147.0	518.01	50.6	10	Relax Erasable Optical Vista Hyperspace (R)	128 MB
	56.45	37.05	19.64	36.60	35.94	50.36	140.5	571.71	50.2	11	Storage Dimensions MCO1-1000 (MI)	128 MB
	59.27	33.23	25.14	40.82	36.18	62.60	138.9	566.21	50.8	12	Pinnacle Micro REO-130S (S)	128 MB
	54.18	33.11	24.81	41.64	36.33	63.20	160.6	559.51	47.5	13	Sony RMO-5350 (S)	128 MB
	53.81	33.20	24.78	42.91	38.77	63.31	160.7	557.51	43.4	14	PLI Infinity Optical 3.5" (S)	128 MB
	54.60	33.11	25.31	43.16	36.47	68.13	160.9	564.71	49.1	15	Optima Technology Diskcovery 128 (S)	128 MB
	54.12	37.46	20.58	42.30	40.12	58.62	171.9	580.21	39.7	16	Relax 128MB Optical Sierra (R)	128 MB
	54.24	37.18	20.24	42.54	40.72	58.60	175.3	580.21	45.7	17	Tulin Technology A-Hive Jr. MO-120 (R)	128 MB
	54.17	37.14	20.09	42.60	40.97	58.79	176.6	579.91	38.6	18	Mass Microsystems DataPak MO/128 (MA)	128 MB
	54.31	37.37	20.24	42.60	41.43	58.90	173.4	579.91	42.4	19	La Cie 128MB Cirrus Optical (MA)	128 MB
	54.18	37.59	20.45	42.81	40.65	58.96	178.5	567.11	42.0	20	TASS Optical World PL128 (MA)	128 MB
	57.71	39.18	21.66	40.91	37.68	63.54	165.1	640.31	42.6	21	Rodime Systems Condor 650e (R)	128 MB
	54.80	37.60	20.62	49.02	41.15	59.46	175.6	588.41	40.7	22	Procom Technology MEOD128 (MI)	128 MB
	54.54	36.68	24.75	42.92	37.09	68.74	212.7	578.11	48.7	23	MicroNet Technology SB-TMO-1000 (MI)	128 MB
	61.96	39.30	20.26	38.59	39.78	67.78	185.1	684.81	40.3	24	Optical Access Access RD/Arta (MA)	128 MB
	58.17	38.81	20.75	45.85	43.82	59.41	176.2	709.61	40.3	25	Bound 'n' Bound 4HS (R)	128 MB
	52.68	39.57	20.75	44.23	39.16	66.22	177.7	672.81	47.1	26		

Macworld Magazine, Nov. 1992 "Optical Update". Forty-three drives tested. 5.25" mechanism standings:
1) Pinnacle Micro PMO-650, 2) Maxoptix Tahiti II, 10) Ricoh Hyperspace, 28) Sony E-501, 41) Hewlett-Packard Corsair.

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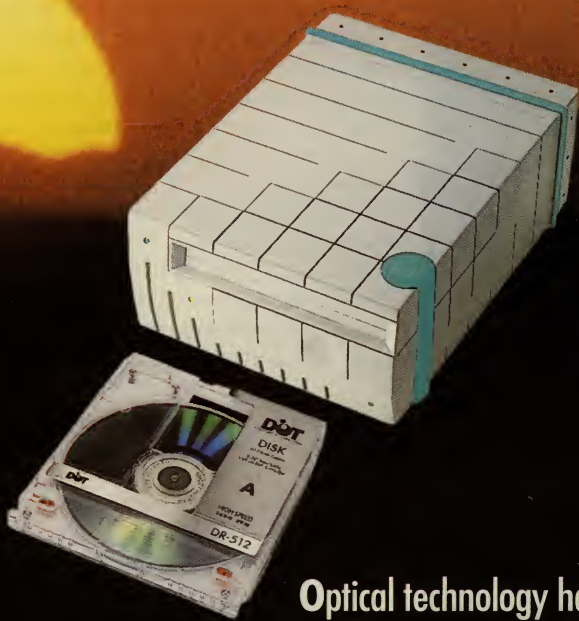
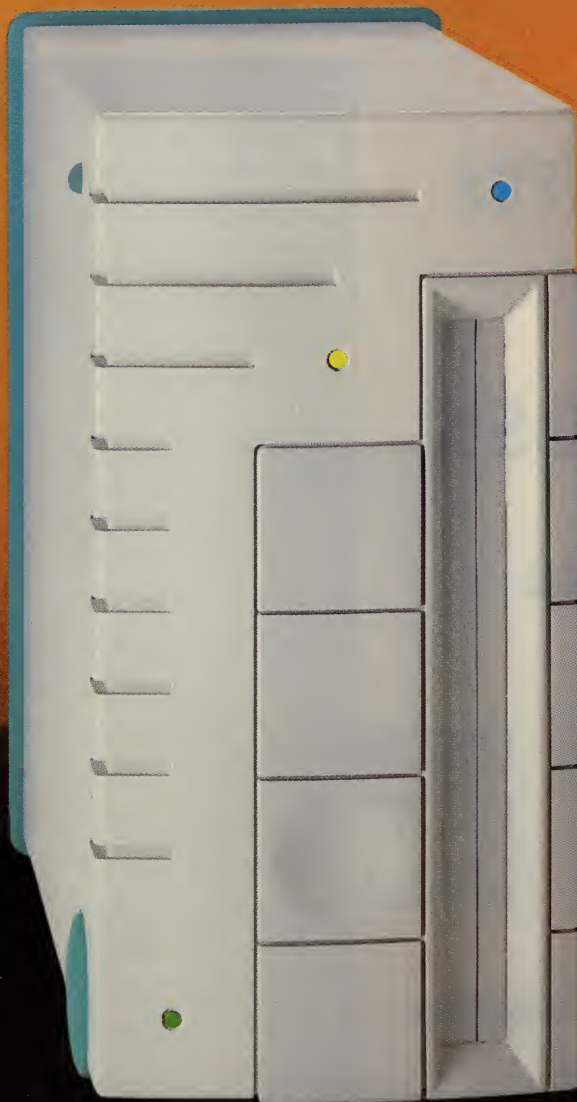
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Charles Piller
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TYPE: 5.25" OPTICAL
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SIZE: 7.3" (H) x 3.6" (W) x 10.0" (D)
WEIGHT: 7.4 LBS
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Drive Type	Retail/650 MB	1.3 GB	2.5 GB	5.0 GB
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Magnetic Hard Drive (650 MB)	\$ 3,745	\$ 7,490	\$ 14,400	\$ 28,800
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From Page 108

cisely, but it flawlessly reads AutoCAD's native file format, the DWG file. Miraculously, it is the only Mac program that will read DWG files containing solids created with AutoCAD's Advanced Modeling Extension (AME) add-on — finally there is an avenue for rendering AutoCAD solids on a Mac.

The program also reads and writes all Intergraph formats, and it writes Encapsulat-

ed PostScript files. An IGES (Initial Graphic Exchange Specification) CALS Class I or II translator is available separately. Although you can't read or write PICT files directly, you can use the Clipboard to copy and paste PICT information between MicroStation Mac and other programs.

Workstation heritage. MicroStation Mac reveals its workstation heritage when you find that you can't use the Mac's fonts. Text is

displayed as a series of sticks — a design choice that favors plotters and ensures file compatibility across all platforms. Nevertheless, you can do some neat page-layout tricks with these typographic relics, such as placing text along a curve, or stretching and rotating a text block to fit between two points. MicroStation Mac allows you to substitute PostScript fonts for your stick fonts when printing.

MicroStation Mac also turns its back on standard Mac fills. You have a choice between

vector-based hatches or solid-color fills. The program comes with a good graphics editor for creating the hatches, however. As with text, you can repeat a hatch pattern along a curve.

Hiding behind MicroStation Mac's true graphical interface is the original command-line interpreter. Although you do not have to use the interpreter, the command-line option does let you write macros for automating drawing tasks. This interpreter is also what opens MicroStation to powerful third-party add-ons.

Dimensioning in MicroStation Mac has been improved greatly over previous versions. The program now supports stacked, ordinate and cumulative associative dimensioning. MicroStation covers all the drafting standards and gives you two choices for setting tolerances.

Nagging details. The program is copy-protected with a device that plugs into an Apple Desktop Bus port. We've encountered numerous compatibility problems with these copy-protection keys in the past, and we expect users of MicroStation Mac will too. This is a serious, complex program with a hefty box full of mandatory documentation. If that weren't enough to discourage copying, the near certainty that users will need technical support should render the protection device obsolete.

Technical support, however, is going to cost you. Intergraph's advice runs \$600 per year, or \$750 per year for sites with multiple copies. Some dealers may beat this price with their local support, so shop around.

Like AutoCAD, MicroStation Mac 4.2 will realize its full potential with third-party add-ons that increase productivity by adding specialized commands for a given discipline. Unlike AutoCAD, third-party support for the Mac version of MicroStation is respectable, although nothing like the participation in the PC market.

Conclusions. MicroStation Mac 4.2 is now the premier Macintosh package among 2-D/3-D CAD programs with its high-quality renderer, relational database links, networking, programming language, walk-through animator and exhaustive set of construction tools. The NURBS surface-tool set makes it easy to mate and mold arbitrary surfaces.

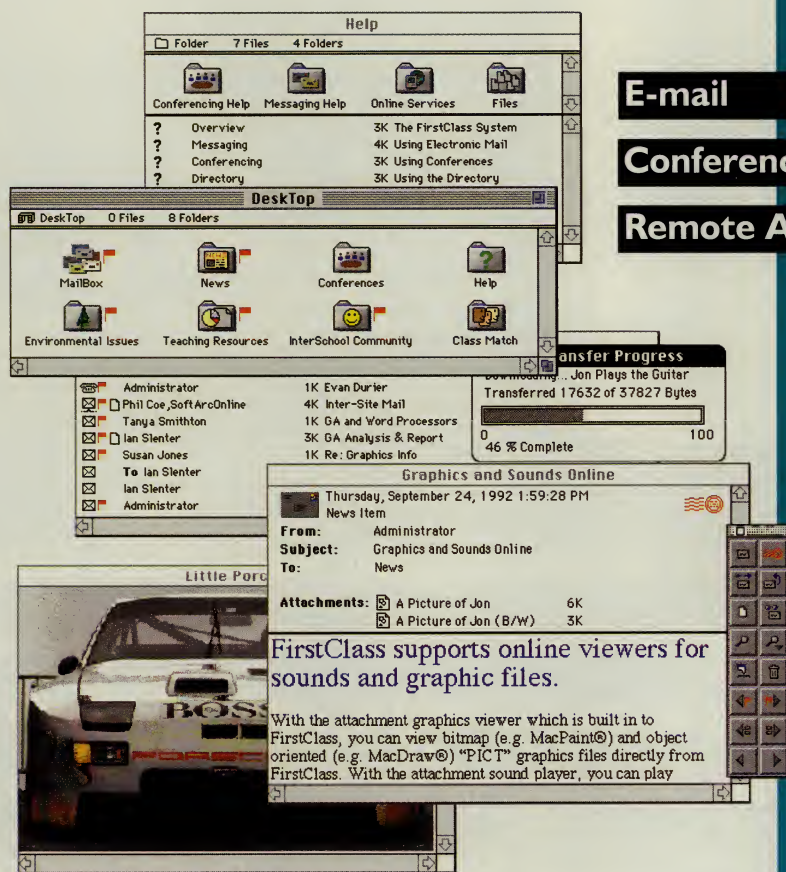
On top of all this, MicroStation Mac redraws and zooms faster than any other Mac CAD package we have seen and is the only program that accurately reads and renders AutoCAD DWG files containing AME solid models.

Ironically, the only popular feature MicroStation Mac is missing is a solid modeler, but we suspect that this is a temporary deficiency.

Intergraph Corp. is at 289 Dunlop Blvd., Huntsville, Ala. 35894. Phone (205) 730-8302 or (800) 345-4856; fax (205) 730-9491. □

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SYSTEM 7 COMPATIBILITY

MicroStation Mac 4.2

Balloon help	No
TrueType	No
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

50MHz

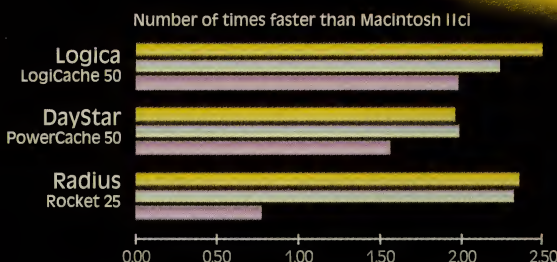
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— June 1992 MacWorld

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ToolPAK

From Page 108

log box in which you can locate the plug-ins. A nice touch here is that when you select one filter all other filters — Acquire and Effects — automatically are loaded where they belong.

Undo Killer lets you turn the Undo command on and off; turning it off makes Canvas run faster as it doesn't have to store information for Undo actions. More useful, we think, would be an "Undo Extender" tool

that gives the user the choice of more than a single level of Undo.

Design ToolPAK. In the Design ToolPAK you'll find Bezier Text, Bind, Blend Objects, Envelope, Extrude, Fractals, Group Composite, Layer Stamp, Name Stamp, Pressure Pen, Smart Lines, Sounder, Spiral and Time Stamp external tools.

The Envelope command offers some neat ways to transform the shape of an object,

including text, by altering the shape of the bounding box. The Single Cusp command, for example, generates concave or convex curves depending on the way you drag adjacent points. Also fun, the Extrude tool lets you easily create simulated 3-D objects from draw objects.

With the Fractals external tool, you can create some interesting fractal effects from any draw object (you can set a Wiggle value from 1 to 20). And with the Spiral tool you can quickly create spiral-shaped Bezier

curves simply by clicking and dragging.

The Sounder tool lets you place a sound object anywhere in your document. Small sounds played fine, although we had a problem playing a large (600-Kbyte) sound file.

The Smart Lines tool draws lines that create a dynamic link between objects, similar to the Connectigon found in Aldus IntelliDraw. Five types of Smart Lines are available in a tear-off window, including Basic, which move in any direction, and Fixed Length, which maintain a constant length.

The Pressure Pen external tool provides a pressure-sensitive freehand tool for attached digitizing tablets and also allows the mouse to mimic pressure-sensitive input. The manual fails to make it clear that only Wacom-compatible tablets are supported. The company said it will revise the manual.

The Bezier Text, Bind Text and Blend Objects external tools are revisions of existing tools. Blend Objects, for example, adds several new options to the way shapes, colors, fill and pen patterns, and pen sizes are blended, including being able to select the positioning of intermediate objects.

Imaging ToolPAK. The Imaging ToolPAK contains Antialias, Chalk, Charcoal, Filters, Fingertip, Luminance, Magic Wand, Masking, Menu Palettes, Rubber Stamp, Soften Edges, Textures, Three-Color Airbrush and Water Droplet external tools. Most of these tools first appeared in Ultra-Paint, Deneba's eight-bit painting program.

The Chalk and Charcoal tools simulate the traditional tools of the same name. They perform OK, and the Charcoal tool has controls for adjusting how light or fuzzy a line will appear. But if you need fully featured functionality along these lines, Fractal Design Corp.'s Sketcher or Painter programs have made a fine art out of such tools.

The Filters tool supplies a range of filters, such as Mosaic and Emboss, which you can apply to paint areas. There also is a Custom Filter Manager through which you can create your own filters, although we found this is a lot more complicated than it should be.

The Masking tool adds basic masking features to Canvas, including the capability to invert, add to and remove from a mask as well as mask to a lasso. Masks also can be saved to disk for use in other illustrations.

The Textures tool lets you create textures (more commonly known as custom fills) from any paint object and save them for future use. Using the Three-Color Airbrush, we were able to quickly create some lively custom backdrops.

Conclusions. The ToolPAKs, which cost \$49.95 each, work with only Version 3.0.6 of Canvas; each ToolPAK contains a utility to update to this version.

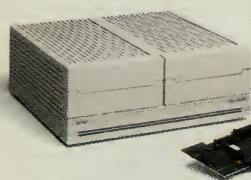
With the release of these three ToolPAKs, Canvas makes up some of the ground lost to the innovative IntelliDraw (see MacWEEK, Aug. 3, 1992) and also beefs up the drawing program's limited painting capabilities. Being able to add more than 40 tools to a program simply by copying files into a folder adds remarkable power to that program. In Canvas' case, it reinforces its position as the best object-oriented drawing program money can buy.

Deneba Software is at 7400 S.W. 87th Ave., Miami, Fla. 33173. Phone (305) 596-5644; fax (305) 273-9069. — *By Philip Bishop*

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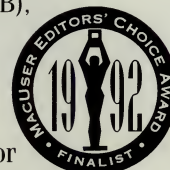
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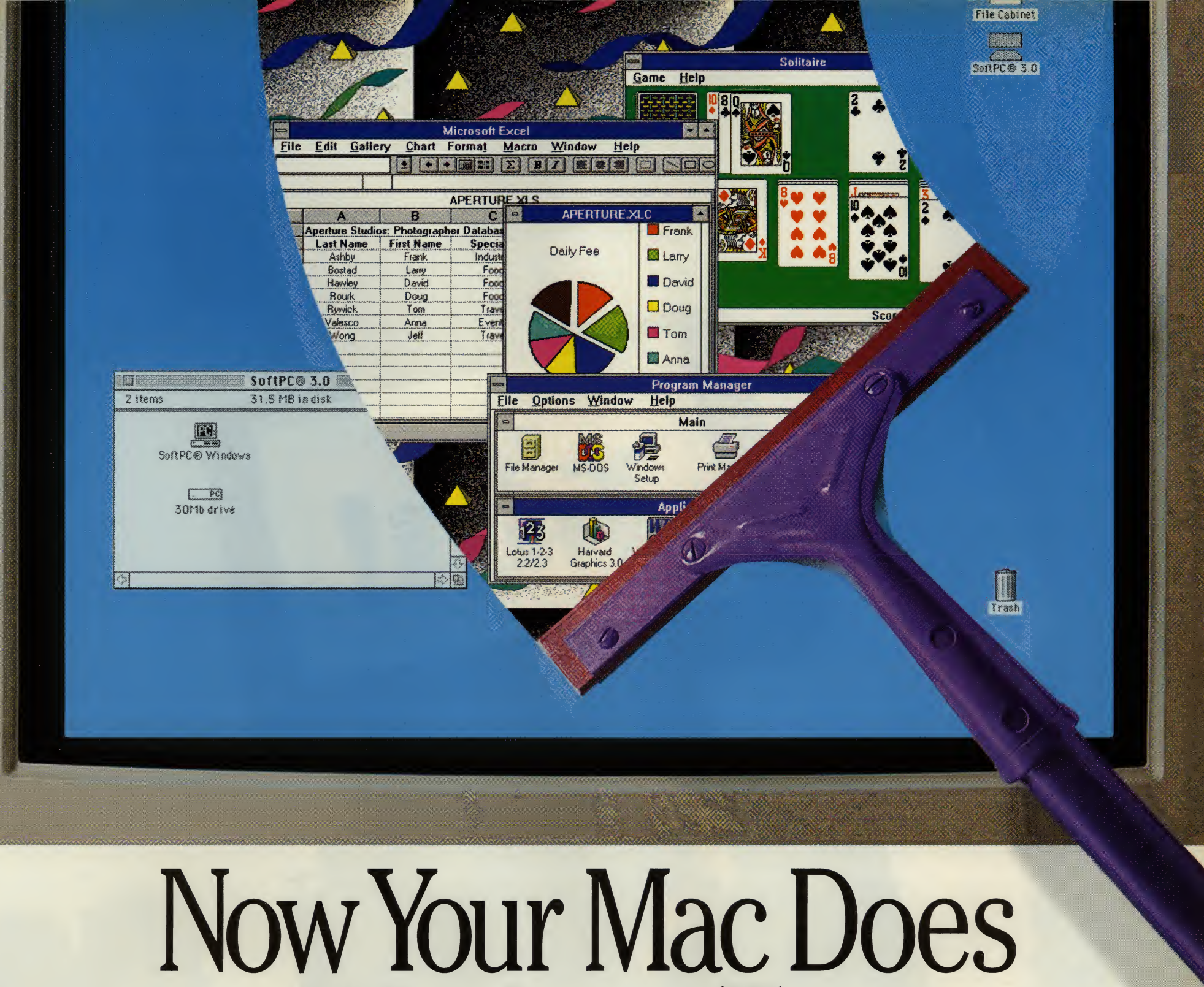
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Comparison

Jet-setters can find cool color in HP, Lexmark PostScript printers

Color inkjets cast off QuickDraw lineage

By Bruce Fraser

Color inkjet printers have established themselves as low-cost, QuickDraw-based devices that use the host computer to rasterize the image. But both Hewlett-Packard Co. and Lexmark International Corp., a subsidiary of IBM Corp., have recently shipped full-blown PostScript color inkjet printers.

Neither is particularly cheap: The Lexmark Color JetPrinter PS 4079 is \$3,495, and the HP PaintJet XL300PS costs a cool \$4,995. Both are four-color printers that can use plain paper up to tabloid size, but any resemblance ends there.

The JetPrinter is a solid but unexciting performer. It uses a Phoenix-Page PostScript Level 1-compatible interpreter, it is slow on complex PostScript documents, and output is typical of inkjet printers.

HP's PaintJet, by contrast, is bril-

liant but erratic. Its speedy Adobe-based PostScript Level 2 interpreter is hindered by an unusually slow print driver that robs the printer of much of its performance. But the quality of the color output, particularly on plain paper, puts the PaintJet in a class of its own.

The superior output of this printer is largely attributable to two factors: HP has developed new inks that produce very saturated color compared with output from other inkjets, thus providing the printer with a gamut of color comparable to or better than what thermal-wax printers produce. HP also has added a heating element to the print engine that heats the paper prior to printing. As a result, much less ink bleeds on contact with the paper (producing a sharper, cleaner image), and cockling — paper wrinkles resulting from the wetness of the ink — is eliminated.

This is the first color inkjet we've seen that produces outstanding results on plain paper; it simply doesn't look like normal inkjet output.

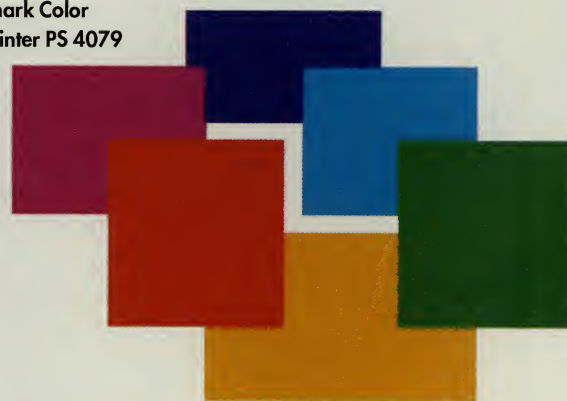
Decent marks. Despite its competition, the JetPrinter is still a decent printer. Its 360-dpi resolution produces sharper type and line art than HP's 300-dpi printer — provided you use specially coated paper. For presentation graphics, it delivers satisfactory results. With continuous-tone images, however, it doesn't fare as well; the color is rather flat, and the output shows noticeable banding between each pass of the print head. Accurate color is also very difficult to achieve.

The JetPrinter driver offers several quality levels and two different screens: standard and enhanced. The enhanced screen includes color balancing options for different kinds of media, but getting good color is a hit-or-miss affair. The High Quality print mode is very slow indeed since the print head stops for eight seconds at the end of every line. On most documents, there's little or no visible difference between High Quality mode and the much faster default mode, which is simply but vaguely named Quality.

As with most inkjet printers, plain-paper output on the JetPrinter is subject to cockling. The printer also has problems with ink bleeding into the paper, particularly when two areas of solid color overlap. Using special coated paper designed for the printer reduces these prob-

See Inkjet, Page 124

Lexmark Color
JetPrinter PS 4079



HP PaintJet
XL300PS



The inkjets' proof is in the printing

In the print samples shown here and on Page 124, the Hewlett-Packard Co. PaintJet XL300PS shows some obvious advantages over its competitor, the Lexmark International Corp. Color JetPrinter PS 4079. The solid swatches of color were printed on plain paper on both printers. The HP's output has crisp, solid edges, but the Lexmark's shows bleeding, both into the paper itself and into adjacent colors where the boxes overlap (see images above). The image of the church (below) was printed on special paper supplied by the vendors, while the fruits and vegetables image (see Page 124) was printed on plain paper. On both continuous-tone images (printed from Adobe Photoshop), the Lexmark shows slightly more detail thanks to its higher resolution, but the colors from the Lexmark are flat and unsaturated. The Lexmark output also shows banding between passes of the print head, particularly on the blue sky, while the PaintJet does not. In the fruits and vegetables image, the Color JetPrinter goes very quickly from saturated color to unsaturated color, giving the tomatoes and peppers an unnatural look, and is very deficient in the greens and browns. The PaintJet provides a complete range of color.

Lexmark Color
JetPrinter PS 4079



HP PaintJet
XL300PS



score card

PostScript color inkjet printers

Two new color inkjet printers featuring resolutions of 300 dpi or better and PostScript compatibility challenge the perception of inkjets as low-cost, low-quality, QuickDraw-only devices.

► **HP PaintJet XL300PS** from Hewlett-Packard Co. is a brilliant but erratic performer. In its new engine, HP solved the paper-wrinkling problem by adding a heater that dries the ink as soon as it hits the page, and the new inks produce brilliant, saturated color more comparable to phase-change (solid-wax) or thermal-wax printers than to typical inkjets. The color is also quite predictable. Problems with print-driver speed (in terms of getting your Mac back) and with the LocalTalk implementation prevent us from recommending it as a general-purpose printer; as a tool for creating knock-'em-dead color comps, however, it's unrivaled in its price range.

► **Lexmark Color JetPrinter PS 4079** from Lexmark International Corp. is a solid, if unexciting, printer. We didn't discover any compatibility problems with the PhoenixPage PostScript-compatible interpreter, but we did find that the standard 4 Mbytes of RAM is inadequate, particularly for tabloid-size pages. The output quality is what one traditionally expects from an inkjet printer: Color is rather flat and unsaturated, plain paper comes out wrinkled because of the wetness of the ink, and color matching is hit or miss.

	HP PaintJet XL300PS	Lexmark Color JetPrinter PS 4079
Overall value	◆◆◆◆	◆◆◆◆
Price	\$4,995	\$3,495
Performance	◆◆◆◆	◆◆◆◆
Features	◆◆◆◆◆	◆◆◆◆
Installation/configuration	◆◆◆◆	◆◆◆◆
Compatibility	◆◆◆◆◆	◆◆◆◆◆
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Inkjet

From Page 122

lems considerably but doesn't eliminate them; the output still has that telltale inkjet look. The printer does a good job on transparencies and on black type, but not on graphics with large areas of color nor on continuous-tone images.

Our other major complaint about the JetPrinter is its standard 4 Mbytes of RAM. This just isn't sufficient for a color printer, particularly one capable of tabloid-size output. In our tests, we quickly ran out of memory even on letter-size pages when we used more than two or three downloadable fonts or when we included large images.

We also question Lexmark's wisdom in shipping a color printer with a PostScript Level 1 interpreter. The JetPrinter includes some Level 2 color extensions but not those that deal with color space conversion; this seems a shortsighted move on Lexmark's part. Still, for PostScript output of presentation graphics or transparencies, it's a reasonably good printer, if a little expensive. If you're looking for an all-around printer and you don't need great color or blazing speed, the JetPrinter is worth considering.

A different color. HP's PaintJet XL300PS is an odd-looking beast with a large footprint (30 by 20 inches, including the paper tray), and a look at the output confirms that this is not your usual inkjet. The colors are rich and saturated, and there's no trace of banding or bleeding, even on plain paper. For truly spectacular results, HP also has a special gloss-finish paper that produces a decidedly noninkjet look, especially with continuous-tone images.

But getting this spectacular output can take a while. When we

Lexmark Color
JetPrinter PS 4079

printed a complex, 220-Kbyte Adobe Illustrator file, the PaintJet proved considerably faster than the JetPrinter no matter which print mode we used. But when we tried printing continuous-tone images or text pages, we found that the PaintJet took much longer to relinquish the Mac than did the JetPrinter. This strongly suggests that the PaintJet interpreter itself is quite speedy—it rasterized the Illustrator file in less than half the time the JetPrinter took. But Illustrator produces its own PostScript code and simply uses the driver to pass the PostScript to the printer, so it isn't affected by driver inefficiencies. An HP spokesperson acknowledged

the sluggishness and pointed to the forthcoming Level 2 print driver from Apple as a solution.

When we tested the printer using both the standard (PostScript Level 1) LaserWriter driver and the Aldus driver, we found that things speeded up somewhat with continuous-tone images and text pages, but it was still much slower than the JetPrinter in returning control of the Mac to us. We suspect that HP's implementation of AppleTalk also may be partly to blame. When we tried background printing, for instance, we got so many timeout error messages that we were forced to conclude that background printing with this printer is largely useless for all but

HP PaintJet
XL300PS

simple text pages. We also noticed that it took as long as a full minute before the "Looking for PaintJet XL300PS" message disappeared and the printer actually started accepting data. All of this points to problems with the AppleTalk implementation.

The PaintJet XL300PS has one other annoying feature: It lacks an on-off switch. As a result of the heater in the engine, the printer takes about five minutes to warm up from a cold start. HP apparently assumes that its users will find this time lag so onerous a penalty that they'll never want to switch it off. We disagree.

Despite these problems, the PaintJet XL300PS is an exceptional printer. Its problems make it a more specialized tool than it would be without them, so we can't recommend it now as an all-around printer—it's simply too slow on too many kinds of documents. But as a dedicated color printer, it produces better-looking output up to tabloid size than anything else remotely in its price range, and it does so on plain paper to boot.

The PaintJet print driver presents simple, understandable choices: A Quality button opens a screen where you can choose from four types of media (plain paper, coated paper, glossy paper and transparency film) and three quality levels (Best, Good and Draft). The other option is a check box for "Match Printed Colors to Screen." We've seen boxes like this before; the difference here is that this one works.

If HP manages to solve the driver and AppleTalk problems, the

PaintJet will be a great all-around printer, since its type output is near-laser quality. The engine redefines our expectations for plain-paper color inkjet output and seems reasonably fast. For now, it's an excellent tool for producing killer color comps, but patience is definitely required.

Conclusions. If you want a color printer primarily for creating overhead transparencies for presentations or for printing PostScript graphics from applications such as Adobe Illustrator and Aldus FreeHand, then the Lexmark Color JetPrinter PS 4079 should fit the bill. It's reasonably speedy and seems to be free of any compatibility problems. If your color output needs also include continuous-tone images or rendered output from 3-D modeling programs, the HP PaintJet XL300PS' wider gamut and superior output make it a much better choice, despite its occasional flakiness on AppleTalk. □

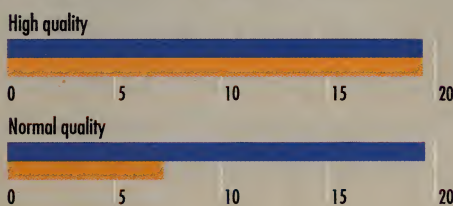
BENCHMARKS

PostScript color inkjet printer performance
(All times in minutes; lower is better)

Adobe Illustrator file (220 Kbytes)



Adobe Photoshop file (768 Kbytes)



Text file (1 page)



Product Info

HEWLETT-PACKARD CO.

HP PaintJet XL300PS: \$4,995

Sales Information Group
19310 Pruneridge Ave., Cupertino, Calif. 95014
Phone (800) 752-0900

LEXMARK INTERNATIONAL CORP.

Lexmark Color JetPrinter PS 4079:

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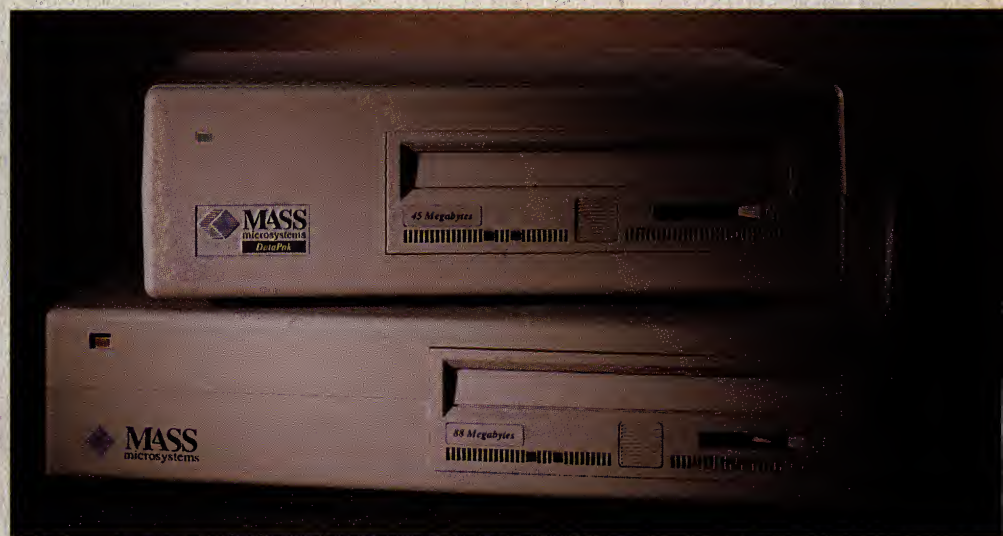
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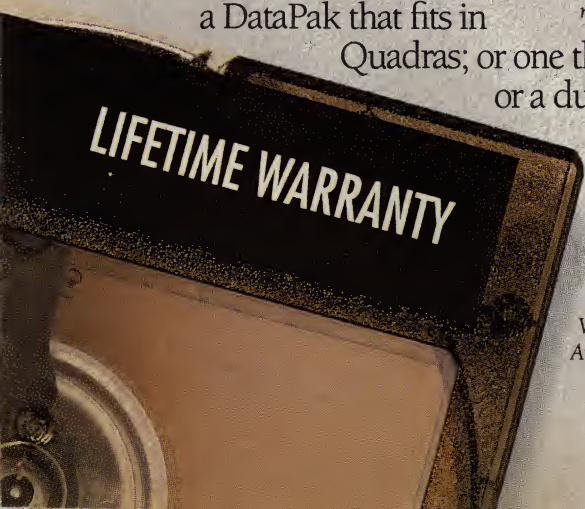
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How many companies offer a Lifetime Warranty on cartridges? You're looking at it. And one's included with every drive.



AEC adds depth and elegance to its Gantt-chart scheduler

Simplicity a plus in FastTrack Schedule

By Mel Male

Management styles vary widely, and not all managers need the sophisticated — and often frustrating — scheduling and analysis tools that full-powered project-management applications offer.

AEC Software Inc. provides a sensible alternative, FastTrack Schedule 2.0, designed with a theme of simplicity while providing all the tools necessary to create visually appealing presentation-quality Gantt-style schedules.

Like the programs it competes with at the easy-to-use, less-complex end of the project-manager power spectrum — Micro Planning International's KeyPlan, Mainstay's MacSchedule Plus and Varcon Systems Inc.'s Great Gantt — FastTrack Schedule is not designed to handle the management

needs of large, complex projects.

FastTrack Schedule lists for \$279. An upgrade from a previous version costs \$89 but is free if you made your purchase after March 1, 1992. Free demo copies are available directly from AEC Software.

FastTrack Schedule is designed to run on any Macintosh, from the Plus up, that has at least 1 Mbyte of RAM. It is compatible with both systems 6 and 7.

Have it your way. The only reports FastTrack Schedule is capable of producing are Gantt-style schedules, but it does these in truly elegant fashion. For example, in Version 2.0, time-line scales are possible both at the top and bottom of a chart. You can create as many time-line scale rows as you wish, choose the units for each — hours, days, weeks, months, quarters, years, fiscal quarters, fiscal years or generic units — and format them to suit your aesthetic taste.

FastTrack Schedule's Activity Bar Setup dialog invites creation of a customized library of schedule bars and milestone symbols. AEC has redesigned it in Version 2.0 to include four panels — a Schedule Bar editor, an Actual Bar editor, a Date Display editor and an Alignment editor. Support for tracking actual dates is new — they can be charted as a point (symbol) extending from the scheduled date or as a second bar.

Twelve built-in data fields, or columns, are available for display — including activity names, dates and times, duration, and percent completion — and you can define new ones to incorporate additional information. Multiple columns of your choice now can be displayed on both sides of the Gantt chart, and you can freeze them so they do not scroll out of the window display. Column-text formatting has been extended to include text formatting for individual cells.

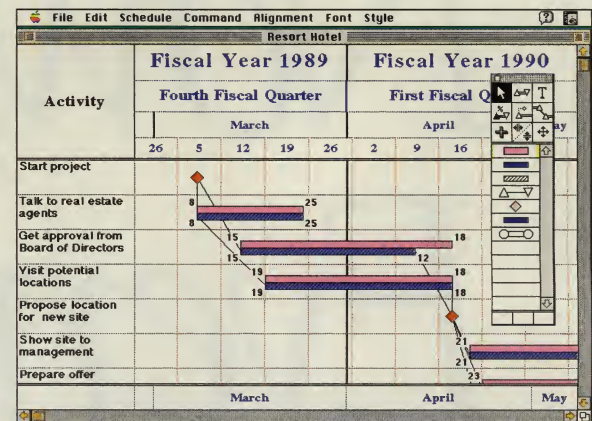
Finally, to embellish the overall appearance of your charts and provide additional information, you can use floating text blocks, activity labels and graphics. The Format Item dialog box facilitates formatting of floating text or pictures — you can add or modify borders, shadows, control background, offsets, corner radius, line size, color shadow width and shadow color.

Keeping it simple. You create a schedule by entering a tab-indented outline of your project's activities.

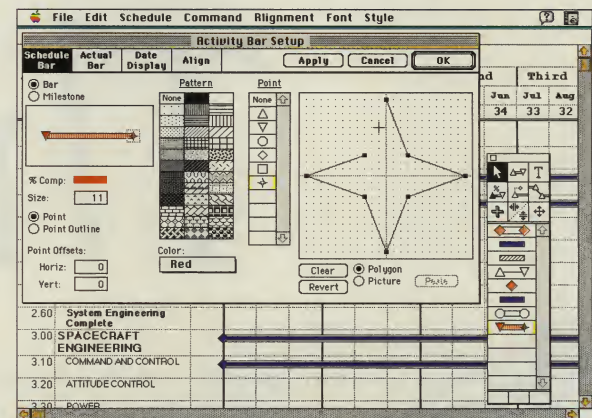
To reposition an activity, you just drag it up or down within the list. Moving the cursor over the upper-right corner of an entry that has subactivities will change the cursor to a magnifying glass — a mouse click rolls up the subactivities below, adds ellipses after the entry and summarizes the subactivity bars at the rolled-up level. You can cut, copy and paste entire activity rows, including rolled-up summaries — copy one of these, paste it elsewhere, and all of its subactivities are pasted with it.

You have a choice of editing dates either by dragging and stretching the Gantt chart's schedule bars or by typing directly into columns. You define the type of bars and symbols displayed with FastTrack Schedule's toolbox. Veterans of previous versions will notice changes to the tool icons and six new tools — Percent Complete, Actual, Link, Cell, Insert and Move. Another new feature is the capability to draw multiple bars on each activity row and still track all of the start and finish dates in the data columns.

More than a pretty picture. Beneath its visually appealing Gantt



FastTrack Schedule's toolbox palette is used to define the type of bars and symbols displayed. Veterans of previous versions will notice changes to the tool icons and six new tools.



You have considerable flexibility for creating your own look with the Activity Bar Setup dialog in FastTrack Schedule. Design your own bars and symbols if the built-in set does not appeal to your aesthetics.

charts, FastTrack Schedule offers some essential project-management and scheduling tools.

You can define either start-to-start or finish-to-start dependencies, or Links, between two activities, and you can use the earliest finish of a group of activities to constrain the start of another activity. You now have an option to make links permanent — Version 1.5 supported only temporary links that remained in

effect only as long as the linked activities remained selected.

Two types of links — hard and soft — are supported. Hard links will always maintain the same amount of separation from the linked point to the start of the second bar. Soft links allow the linked point of the first bar to change without affecting the second bar — until the first point's finish date conflicts with the start point of

See *FastTrack*, Page 128

ACT!'s power offset by unwieldy interface

New contact manager could use speed boost

By Loftus E. Becker Jr.

ACT! for the Macintosh from Contact Software International Inc. is a new product aimed at users who want to keep track of activities tied to specific contacts.

The \$395 program, essentially a port of the company's popular DOS and Microsoft Windows contact managers, offers the average user a good approximation of the power of a custom-designed application. Unfortunately, it's also somewhat sluggish and, in a myriad of subtle but frustrating ways, feels more like a Windows than a Macintosh application.

ACT! facts. The heart of ACT! is a contacts database, which provides 74 fixed-length fields (plus an indefinite-length Notes field) for each contact. Any field can be renamed, some are indexed, and

most can be customized to accept only certain data types — to allow data entry from a pop-up list, for example. You can create as many separate databases as you like, with disk space the only limit, and merge information from any of them. You can open only one database at a time.

Contact screens are the pivot around which ACT! revolves; almost everything else you do in ACT! is tied to individual contact records. Activities — classified by the program as meetings, calls and to-dos — must be tied to a specific contact. (Of course, there's nothing

See *ACT!*, Page 128

score card

FastTrack Schedule

AEC Software Inc.

Version tested: 2.0

List price: \$279*

Overall value ♦♦♦♦

Because management styles and needs vary widely, not all managers will use the sophisticated but complex tools offered by more full-featured applications. FastTrack Schedule is an excellent choice for anyone whose primary need is to create precise, presentation-quality Gantt charts. FastTrack Schedule's strength lies in its ease of use and the visually appealing Gantt-style schedules it enables you to produce. It also provides some essential project-management and scheduling tools — hierarchical outlining with collapse and schedule-summarizing capability, simple dependencies and user-defined data fields. Lacking are critical-path analysis, resource-management tools and cost-analysis capabilities usually needed for large, complex projects.

Performance ♦♦♦♦

Features ♦♦♦♦

Ease of use ♦♦♦♦

Documentation/support ♦♦♦♦

*Upgrades from previous versions, \$89; free if purchased after March 1, 1992.

score card

ACT! for the Macintosh

Contact Software International Inc.

Overall value ♦♦♦♦

Version tested: 1.0

List price: \$395

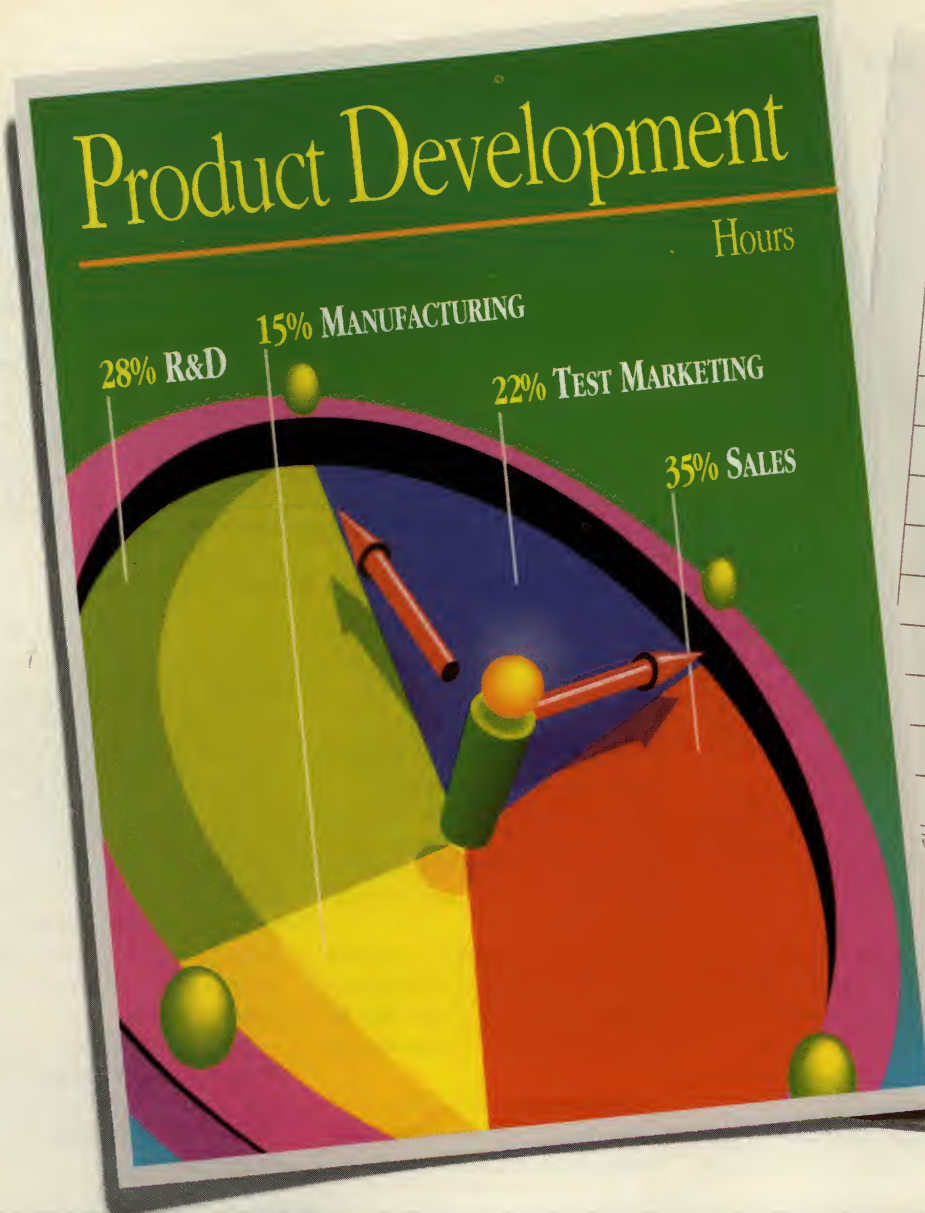
ACT! for the Macintosh is like a powerful stereo receiver designed for left-handers and labeled in the original Japanese. It's loaded with useful features, and with practice you can do almost anything you want. But you'll have to forget some old habits and prepare for unexpected results. For users whose activities revolve around contacts with specific individuals, ACT! delivers great power in scheduling, performing and keeping track of work. No commercially available contact manager for the Mac can do everything that ACT! can. But deviations from the standard Mac interface and a mediocre word processor could cause you to prefer a less-powerful, less-integrated solution made up of better individual components.

Performance ♦♦♦♦

Features ♦♦♦♦

Ease of use ♦♦♦♦

Documentation/support ♦♦♦♦



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REQUESTION NO. 163438

DATE 12-10 REQUESTED BY [Signature] DEPARTMENT [Blank] NEW ORDER [Blank] TO BE USED FOR [Blank]

QUANTITY	DESCRIPTION	DATE REQUIRED	DATE PROMISED	TOTAL COST
1	Tektronix Phaser 200 Color printer			\$3,695.00
	✓ laser paper			
	✓ 2pp/min			
	✓ Adobe PS Level 2			

APPROVED

RECOMMENDED VENDOR: *Recommend dual-tray option*

COST: \$3,695.00

☒ WITHIN BUDGET ☐ OUTSIDE BUDGET

SUPERVISOR	DIRECTOR	PRESIDENT
[Signature]	[Signature]	[Signature]

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Tektronix

FastTrack

From Page 126

the second bar. To ensure that changes to dependent activities do not move an important deadline, you can lock selected activity dates.

Depending on your management style, these tools may suffice for relatively simple projects. But FastTrack Schedule lacks critical-path analysis, resource-management tools and cost-analysis capabilities necessary for managing large, complex projects.

Useful data exchange. The ease with which data can be imported and exported to and from Claris Corp.'s MacProject, Microsoft Project, spreadsheets, databases and other programs has improved,

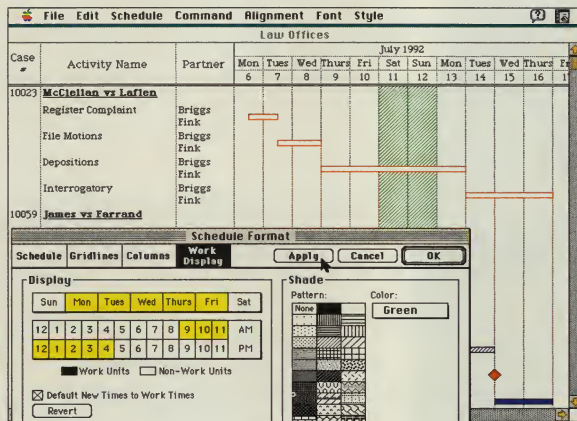
SYSTEM 7 COMPATIBILITY

FastTrack Schedule 2.0

Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

Attention is given to what some might consider a trivial matter — the shading of nonwork periods supports AEC's claim that FastTrack Schedule gives you control over every aspect of your charts.

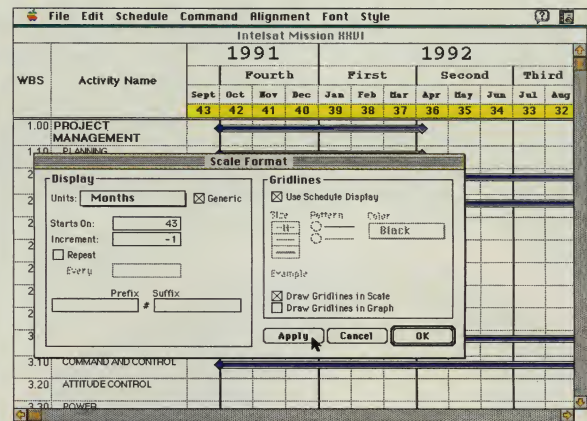


but publish and subscribe features are not supported. FastTrack Schedule's import capability allows it to function as a Gantt-chart report generator for other programs capable of outputting its data in standard text-file format. Because of its easy graphical interface and export features, FastTrack Schedule also has the capability to function as a front end for generating scheduling data for use in other applications.

Versatile print preview. A Page Map shows the number and orientation of the pages needed to print your schedule at its current size, and a "fit to pages" option lets

you specify a fixed number of pages to use for a chart's horizontal dimension. The Standard Layout mode prints a schedule on individual pages, repeating column headings and scaling rows as needed. Wall Chart prints the schedule on pages that you may piece together to produce one large chart. Your schedule also can be "printed" to the Clipboard.

Convenient tools are provided for adding and dragging text blocks and pictures, and displaying the current page, date and time. In print preview you do not edit the schedule chart itself but work instead in a separate overlay layer to place text blocks and pictures for



schedule printing that need not be displayed in the main window of the schedule.

Documentation and support. FastTrack Schedule's concise User Manual contains a comprehensive tutorial, a reference guide oriented toward the beginner, descriptions of the example files, and a glossary.

Although its interface is intuitive, new users probably would appreciate the convenience of on-line help or balloon help — both are missing.

Conclusions. FastTrack Schedule 2.0 provides all the tools necessary to create top-notch,

presentation-quality Gantt charts.

In addition, it contains some essential project-management and scheduling tools necessary for dealing with relatively simple projects. Lacking are the critical-path analysis, resource-management tools and cost-analysis capabilities necessary for the management of large, complex projects. These omissions may be a source of frustration for some, but those with less far-reaching needs will be well-served by FastTrack Schedule.

AEC Software Inc. is at 22611 Markey Court, Building 113, Sterling, Va. 22170. Phone (703) 450-1980 or (800) 346-9413; fax (703) 450-9786. □

ACT!

From Page 126

to prevent you from calling a project, an idea or even the family dog a "contact." But if you're looking for a more powerful version of traditional calendar and project-management programs, this isn't the package for you.) You also must tie activities to a single date, and you can specify a particular time if you wish.

You can schedule or clear an activity almost anywhere in the program. (Clearing an activity

marks it as done and stores it in a "historical" part of the database; cleared activities can be reviewed through special reports.) You can schedule a single activity for each contact in a selected group. The scheduling dialogs can make heavy use of pop-up lists and calendars. The description field is limited to 70 characters.

You can view unfinished work in several ways. The contact screens can show the next scheduled meeting, call and to-do item for each

contact. A daily, weekly or monthly calendar — either printed or on screen — will display your schedule in calendar format. (The graphic displays have less granularity than the program's scheduling capabilities. If you have one call scheduled for 2 p.m. and another for 2:05 p.m., only one will display or print in a calendar view.)

Finally, you can view or print lists of unfinished work for some

or all of your contacts over a designated period.

Features. None of this is more than one would expect. ACT! claims your attention on the basis of several powerful features.

First, the database contains an unusually large number of fields for each contact, so it's easy to access a large amount of categorized information. You can rename any field (so

you know what it's for), create pick lists for data entry and specify that changes in any field be recorded in the History record for each contact.

Some fields are automatically filled by the program; you can see at a glance, for instance, when you last called or met with the contact. Curiously, no single display screen will show all of the fields; you have to switch between at least two screens to see everything.

ACT! includes powerful search capabilities that make good use of Boolean logic. If you own GeoQuery Corp.'s GeoQuery, you can even display contact locations on a map, which is quite useful for those who visit their customers.

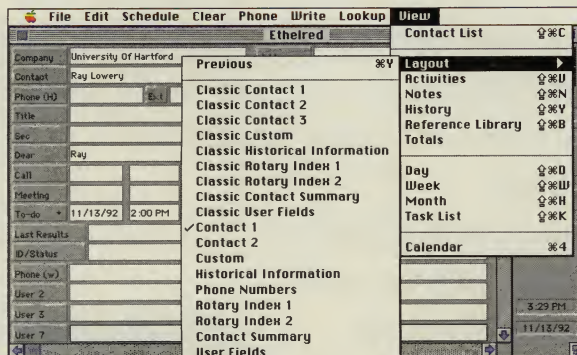
ACT!'s History feature and reporting capabilities make it easy to see what you've done in the past. Any field can be designated as a History field, which means that changes will be logged in a History record for that contact. Next Activity fields are History fields, so every cleared activity is logged in the History record.

ACT! provides summary and detail report templates that allow you to display or print a report showing the number or details of calls and meetings for each person in a selected group. You can create your own reports if those provided aren't sufficient.

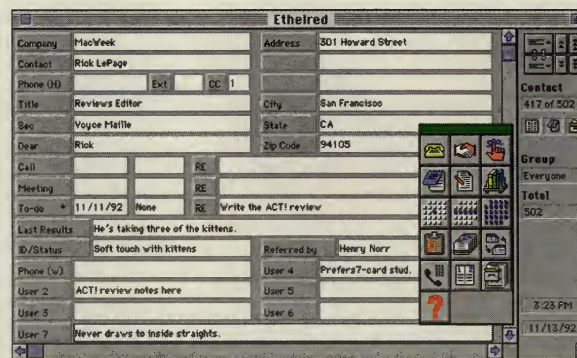
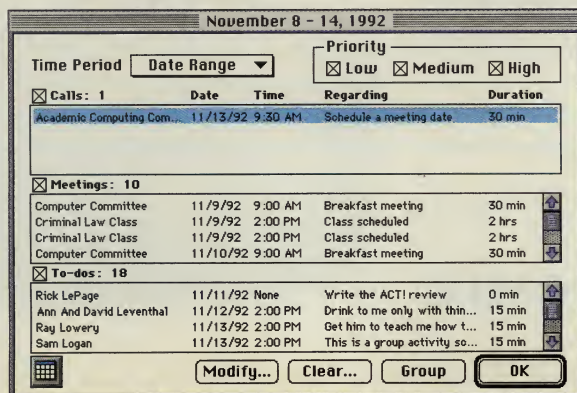
Finally, ACT! includes a dedicated word processor with an envelope-printing facility. The word processor includes most of the usual features,

See ACT!, Page 130

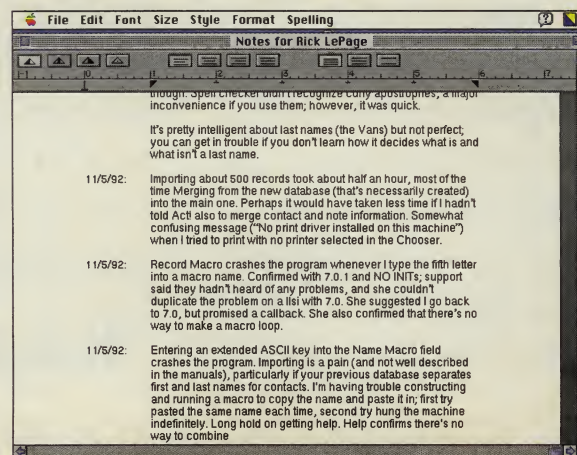
A Layout sub-menu under the View menu provides access to 18 different views of the database fields. However, you can't select them from the keyboard.



This report shows all of the scheduled tasks for a one-week period. From this window it's easy to clear or modify scheduled tasks. You can add new tasks by clicking in the icon bar or floating palette.



Icons at the lower corner of the daily calendar window make it easy to switch to weekly or monthly views or to print. Every event is tied to an individual contact.



ACT!'s word processor is used for writing notes and creating templates for form letters or reports. Shown here are notes linked to a contact; a new date is entered automatically every time you open the Notes window.



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ACT!

From Page 128

including a spelling checker, but we never warmed up to it despite almost daily use.

The word processor, which also serves as the engine for reports, can access database fields so you can construct templates to personalize a form letter. There are, however, no conditional commands available; if you want to add a postscript that says, "Please give my regards to [spouse's name]" where appropriate,

you'll have to create two templates and send the letters to the separate groups.

Doesn't act like a Mac. ACT! is a powerful program with more helpful features than we can mention. Nevertheless, we remained uncomfortable with it after more than a month of daily use.

ACT! violates both the spirit and the letter of the Macintosh interface. The program is highly modal. Once you're outside of the

basic contact screens — when you're displaying a calendar, for instance — all of the menu commands dim, except Cut, Copy and Paste. Print is a menu command only in the word processor, it's available only by clicking an icon in the window, and you can't avoid the Page Setup dialog. You can't have both a calendar and a contact screen visible at once.

Other examples of Mac interface violation are legion. Calendars are implemented as modal dialogs with no close box, so they can

be dismissed only by clicking the Okay button or by pressing either Return or Enter. Windows sometimes disappear when you don't expect it. Everything but the basic contact window disappears when you shift to another application; there's no way to leave a calendar open for reference while you work in another application.

Icons in the icon bar respond to mouse clicks, but icons on contact screens respond to clicks only if they aren't "recessed," in which case they're for display only. In short, ACT! feels like what it is — a Windows port — and the sometimes subtle differences only remind you of the reason you bought a Mac in the first place.

ACT! is no speed demon. Routine operations were prompt but not snappy, even on our Mac IIx. Standard searches are quick enough on indexed fields, but even simple queries on unindexed fields took one minute or so (with 500 records), and complex ones sent us out for coffee.

Small delays can add up; we were happiest when our desk had a lot of brief tasks, such as opening the mail, that we could dispose of while waiting for the results.

Documentation and support. The program is not easy to learn, and its report templates and Boolean searches aren't easy to use.

The User's Guide, despite a mediocre index, does a good enough job of getting the beginner up to speed with basic functions and provides a fair introduction to some of the fancier ones. But the unindexed Reference Manual, although lengthy, is fragmented (there are separate entries for "Group, Save As" and "Save Group As," for instance). It is also short on helpful examples and, worse, the examples were sometimes wrong.

The customer-support staff was gracious and helpful and stuck with us beyond the point at which other companies would have given up.

Representatives quickly told us when something couldn't be done and gave useful suggestions when it could. Overall we found just the level of support needed for this complicated program.

Conclusions. For all its flaws, ACT! is more powerful than its competitors in the Mac market. With more attention to the Macintosh interface and a little more speed, we'd recommend it without qualification to anyone wanting a contact manager.

As matters stand, however, we think you should consider carefully whether the interface drawbacks are outweighed by its considerable power.

Contact Software International Inc. is at 1840 Hutton Drive, No. 200, Carrollton, Texas 75006. Phone (214) 919-9500; fax (214) 919-9750. □

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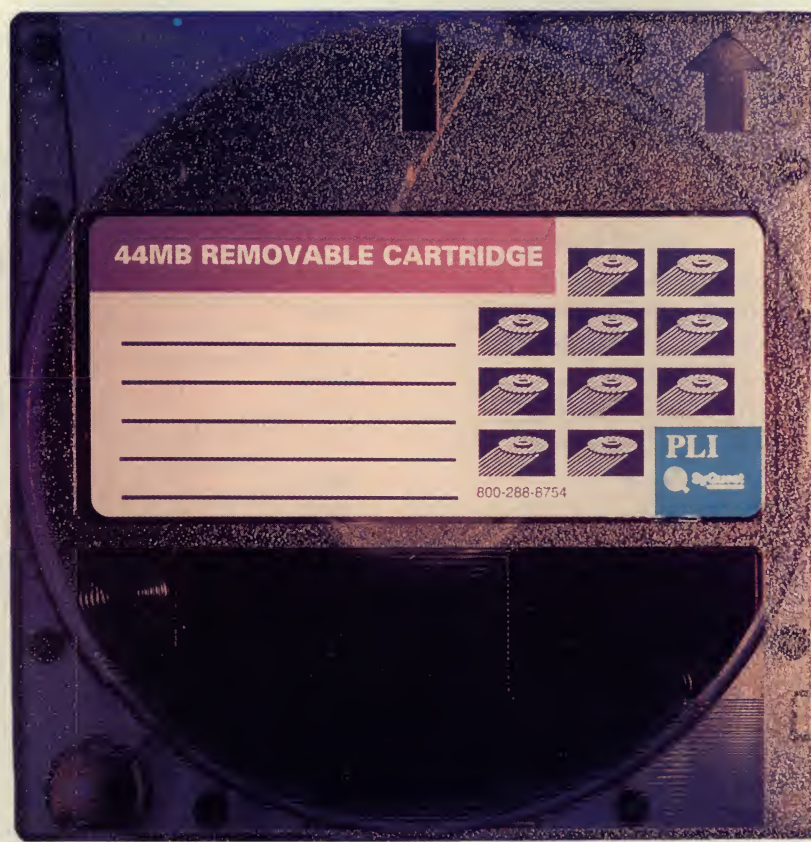
SYSTEM 7 COMPATIBILITY

ACT! for the Macintosh 1.0

Balloon help	Yes
TrueType	Yes
Publish and subscribe	No
Apple events	Yes
32-bit addressing*	Yes

*According to vendor.

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The Year in Reviews

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ACCOUNTING & FINANCIAL ANALYSIS

Accountant, Inc. 3.0 Softsync Inc.	05/11
MacInTax 92 ChipSoft Inc.	02/03

BACKUP UTILITIES

DiskFit Pro 1.0 Dantz Development Corp.	02/10
FastBack Plus 2.6 Fifth Generation Systems Inc.	02/10
NetStream 2.1 Personal Computer Peripherals Corp.	02/10
Redux 1.63 Microseeds Publishing Inc.	02/10
Retrospect Remote 1.3 Dantz Development Corp.	02/10
SnapBack 1.0 Golden Triangle Computers Inc.	07/13
SurfGuard 2.09 Surf City Software	02/10
Total Recall 1.5.2 Centa Systems	02/10

CD-ROM DRIVES

AppleCD 150 Apple	06/22
CDC-431 Chinon America Inc.	01/27
CDSC-Plus CD-ROM drive Apple	01/27
Porta-Drive 3300 CD Technology Inc.	01/27

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LanRover/L Shiva Corp.	07/27
MiCC Pocket Fax Modem MiCC	04/06
PowerModem PSI Integration Inc.	06/22
PowerPort/Gold Global Village Communication Inc.	09/14
PowerPort/V.32 Global Village Communication Inc.	03/16
TelePort/FullFax Global Village Communication Inc.	04/06

COMMUNICATIONS & NETWORKING SOFTWARE

AppleShare 3.0 Apple	03/09
DataClub Classic 2.0 Novell Inc. (formerly IBS)	01/06
DataClub Elite 2.0 Novell Inc. (formerly IBS)	01/06, 03/09
Extra! for Macintosh 1.0 Attachmate Corp.	10/26
FastComm 1.0 Vertical Solutions Inc.	04/20
GraceLAN Asset Manager TechWorks Inc.	07/27
GraceLAN Update Manager TechWorks Inc.	01/20
Irma Workstation for Mac 2.1.1 Digital Comm. Assoc. Inc.	10/26
LikeWise 1.0 Apple	10/12
MacMainFrame 5.0 Avatar Corp.	10/26
MicroPhone II 4.0 Software Ventures Corp.	03/23
NetMounter 1.0 Dayna Communications Inc.	05/18
NetWare 3270 Lan Workstation for Macintosh 1.0 Novell Inc.	10/26
Netway 3270A 1.1 Avatar Corp.	10/26
Network SuperVisor 2.0 CSG Technologies Inc.	04/13
Networks 2.0 Caravelle Networks Corp.	10/12
Nok Nok 1.0 Trik Inc.	04/27
Silver Cloud 1.0 The AG Group Inc.	08/24
SNA•ps 1.1 Apple	10/26
VersaTerm Pro 4.6 Synergy Software	08/03
Vicom Pro 4.11 Vicom Technology Ltd.	05/25
Vines Option for Macintosh 5.0 Banyan Systems Inc.	04/20
WireTap 2.0 Hologlyph Inc.	09/21
XGator 1.0 Cayman Systems Inc.	01/06

COMPUTER-AIDED DESIGN

Aperture Professional 2.0.7 Aperture Technologies Inc.	05/04
AutoCAD Release 11 Autodesk Inc.	06/15
Generic CADD 2.0 Autodesk Inc.	07/27
MiniCad+ 4.0 Diehl Graphsoft Inc.	11/02
TurboCASE 4.0 StructSoft Inc.	04/06
Vellum 3D Ashlar Inc.	01/20

COMPUTERS & CPU ACCELERATORS

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Classic Performer Harris Laboratories Inc.	02/17
FastCache Quadra DayStar Digital Inc.	11/09

FastMath Classic II Applied Engineering

Mac Classic II Apple

Mac LC II Apple

Mac PowerBook 100 Apple

Mac PowerBook 140 Apple

Mac PowerBook 180 Apple

Mac Ilvx Apple

MicroMac Plus MicroMac Technology Inc.

Nexus fx 55 accelerator Perspect Systems Inc.

QuadCache 25 Hash-Tech Inc.

CROSS-PLATFORM PRODUCTS

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PRODUCT

PREVIEW

Also known as: MacWEEK's MVB* Event

MacWEEK readers are busy. Sure, you always make time to see the latest products at the industry shows, but it's exhausting to wade through the crowds. It takes too much time searching for someone who can answer important questions about product features, system requirements, service availability, pricing.

Or, there is MacWEEK's annual MVB event in San Francisco. The MVB show is designed to give a limited number of MacWEEK readers the opportunity to get a close look at the latest products for the Macintosh. The most innovative Macintosh vendors will be there to demonstrate products and answer questions.

The MacWEEK MVB event will be held in San Francisco on January 5th, the Tuesday before the Mac Expo. Doors open at 12pm with a private lunch hosted by NEC. The product exhibition hours are 1:30 to 4pm, all guests are eligible for our product drawing.

The MacWEEK MVB event is the opportunity for you to make the most of your time in San Francisco. To reserve a ticket, please complete the form and fax it to the number indicated. Complete schedule and location information will be sent with your confirmation.

Date: Tuesday, January 5, 1993 Location: San Francisco, CA Fax to: (415) 243-3650

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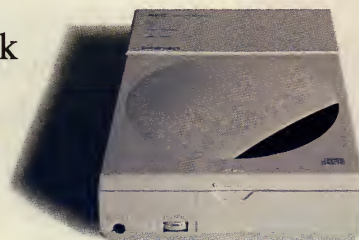
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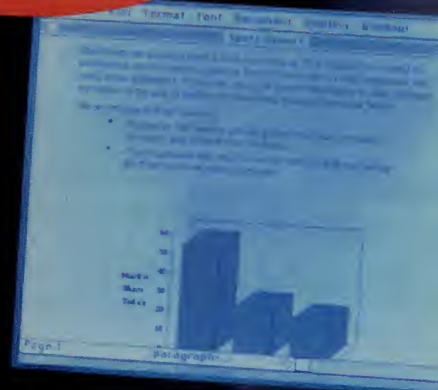
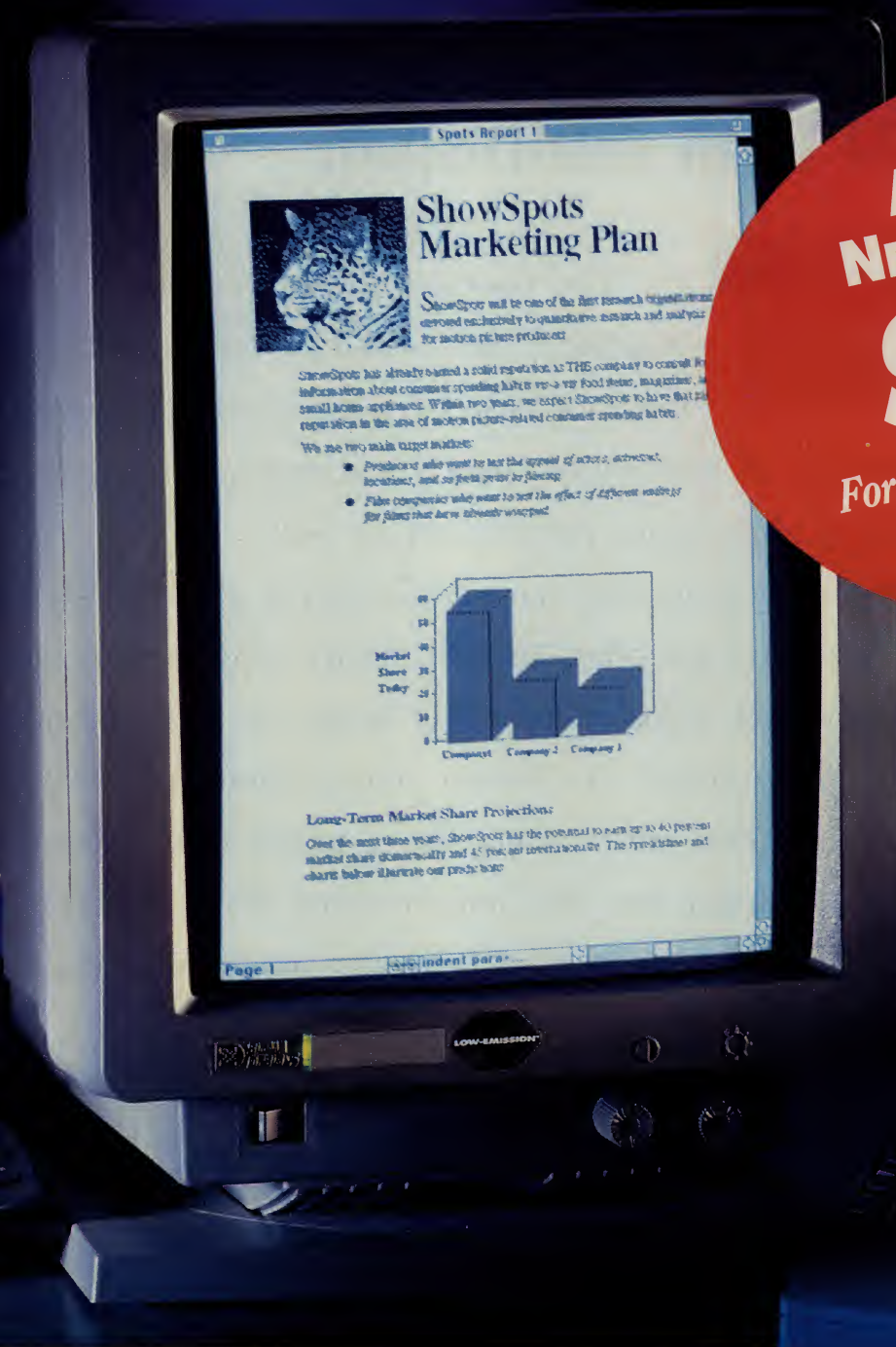
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Add-on programs power up QuarkXPress, PageMaker

Additions and XTensions let PageMaker and Quark users add custom features.

By **Connie Guglielmo**

There's an old cliché underlying the strategy behind the add-on technology of QuarkXPress and Aldus PageMaker that acknowledges you can't be all things to all people.

Recognizing that their users want more features no matter how much functionality they add to their page-layout programs, Quark Inc. in 1989 and Aldus Corp. in 1991 created, respectively, XTensions and Additions technology.

While the approaches taken toward providing that add-on functionality differ, the end result for users is the same: a variety of practical add-on tools, some which make XPress and PageMaker easier to use, some which fill gaps in the programs' feature sets, and some specialized vertical-market tools that let users customize the page-layout programs to suit specific publishing needs.

XTensions. Bob Trikakakis is a self-described XTensions junkie. "I've got about 25," said Trikakakis, principal of TriMac Graphics, a desktop publishing consulting company in Shrewsbury, Mass. "Some I

bought out of curiosity, and some I could never get along without," he said. For example, MasterMenus, which conveniently puts the most-used menu functions in a floating palette, is an invaluable tool for the company, which is just one reason why Trikakakis said that "buying XTensions has become an addictive habit."

Trikakakis has a wide assortment to choose from. There are more than 120 XTensions available, ranging from popular utilities such as Navigator XT, an XTension that cuts down on scrolling time by letting users navigate through an XPress document by clicking on a thumbnail view of the page or spread, to Magpie, a "hunt and gather" XTension that searches, gathers and places all linked graphics and fonts used in a document into folders.

There are even specialized color-production tools such as IN-position, a \$1,750 XTension for handling imposition ordering of publications. Scitex America Corp., which has had a long working relationship with Quark, this month will release Scitex XTensions, 12 tools ranging in price from \$69 to



GARY JAEGER

\$199 that aid in the production and printing of XPress documents.

"[The XTensions] pay for themselves time and time again," said Rob Pennar, computer graphics specialist for Parise Design of Millwood, N.Y. "We're a high-volume firm that needs to get stuff out quickly, and some of the XTensions just make my life easier. For example, we work on very large documents with 120 elements on the page and are constantly scrolling around. But Navigator [XT] lets me go right to where I want."

Quark also has developed its own XTensions, such as QuarkPrint, which adds several advanced print-related features to the XPress 3.1.

Through a variety of on-line services, Quark distributes its XTensions free, including Bob, a go-to-page navigation tool, and Son of Bob, which lets users change a page's view scale with a keyboard shortcut. Quark and its developers also have begun offering Windows versions of XTensions for XPress for Windows.

Heavy development. Over the past three years, Quark has signed on nearly 700 XTensions developers, according to Peter Warren, marketing director for Quark. While many developers create custom XTensions for in-house use, others with innovative ideas have created commercial XTensions.

The popularity of XTensions led to the formation of XChange, a year-old company that serves as a clearinghouse for XTensions. The company helps XTensions developers develop, design and beta test products, as well as market and sell them, according to William Buckingham, president of XChange, which recently opened an office in London to coordinate distribution of XTensions in Europe.

XChange distributes a quarterly updated catalog of XTensions and also publishes a monthly newsletter that features news and reviews, offers special pricing deals, and includes a Disk of the Month containing demo versions of new XTensions.

Buckingham estimates that five to 10 new XTensions are developed each month for the Macintosh and that XChange gets about 10,000 calls per month asking for information about the technology. "Devel-

See Add-ons, next page

Quark extends its reach with a variety of XTensions

There are more than 120 XTensions available for QuarkXPress. While Quark Inc. does put together a catalog that lists available XTensions, the catalog distributed by XChange is more current, acknowledges Peter Warren, marketing manager for Quark.

The following is just a random sampling of some of the utilities that you can find in the XChange catalog:

Graphics utilities include:

► **Scitex Image Tools** is a \$199 bundle of four XTensions, including Blends, for creating straight line or radial blends with up to 14 colors; Silhouettes, for creating masks and image silhouettes; Picture Scaling, which lets users scale a picture interactively without dialog boxes or keyboard commands; and Quick Proof, which prints smaller PICT screen previews of Encapsulated PostScript and TIFF images.

Text tools include:

► **Dashes** is a high-end hyphenation tool designed to improve the appearance and readability of a text by inserting inconspicuous hyphens. Dashes is available in 20 languages for \$200 per language.

► **WordPerfect DOS and MS Word XTensions**, priced at \$295 each, and the \$395 Wang WP/PC XTension are text-conversion utilities that also convert all text attributes automatically.

Formatting tools include:

► **Ad Director** is an automated advertising dummyping program that retails for \$5,995.

► **TableWorks** is a \$299 table-making XTension that lets XPress users create and edit tables.

► **Indextension**, which retails for \$99, generates simple indexes by letting users mark words or phrases within XPress documents.

Color pre-press tools include:

► **SpectreSepts QX**, a \$495 XTension, can produce high-quality color separations of XPress documents, including color TIFF and PICT images.

General utilities include:

► **Navigator XT** is a \$65 XTension that lets users scroll through documents by clicking on a thumbnail view of the page or spread.

► **Alias** is a \$189 XTension that adds multiple search-and-replace capabilities to XPress.

► **Magpie** is a \$99 "hunt and gather" XTension that simplifies creating disks for service bureaus and printers by gathering and placing a copy of all linked graphics and fonts used in a document within a single folder.

► **MasterMenus** is a \$69 XTension that builds a custom palette of frequently used commands. — *By Connie Guglielmo*

Add-ons

From previous page

opers and users are very enthusiastic about the XTensions, and I believe it's going to remain that way for a while," Buckingham said.

Adding on to PageMaker.

In comparison, Additions technology for PageMaker is in its infancy, but it is already off to a promising start. When it began shipping PageMaker 4.2 last year, Aldus bundled six Additions it had created, including Drop Caps, which automates the process of creating enlarged initial letters at the beginning of a paragraph, and Make Booklet, which reorders pages into two-page spreads for printing in booklet form.

The company now offers PageMaker users more than 18 of its own Additions, which can be downloaded free from the Aldus Additions Sampler folder on CompuServe.

Aldus third-party developers also have created more than 20 commercial Additions, including Sonar Bookends, an Addition that generates indexes and tables of contents; PMproKit, a collection of Additions for kerning, distorting type, rotating and merging, and creating columns; and Import That!, an Addition that imports a variety of non-Macintosh graphics file formats into PageMaker.

Publishing Revenue Partners now offers its Tableau, an application for managing and formatting classified ads, with an Addition that makes it easier to transfer Tableau database information to PageMaker.

"We got

involved with Additions because it makes it easier for our users, a majority of whom use PageMaker, to work with our products," said Reginald Braithwaite, company founder. "The Addition is a real timesaver because instead of using the Place command, we have an automated link between our database and PageMaker 4.2."

Aldus last month began a new marketing push behind Additions that includes distributing a new brochure describing Aldus and third-party Additions for PageMaker. Developer interest is growing in the technology, according to Karen Howe, senior product marketing manager at Aldus, who said that there are 80 to 100 developers working on commercial Additions for the Macintosh and Windows versions of PageMaker.

You say XTensions, I say Additions. The most significant

A sampler of PageMaker Additions

In November, Aldus Corp. began distributing a catalog with descriptions of 19 Additions created by about 10 third-party developers. Karen Howe, senior product marketing manager at Aldus, estimates that between 80 to 100 developers will be working on creating new Additions when Aldus ships its Additions developers tool kit with PageMaker 5.0 early this year.

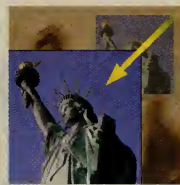
Among the graphic-utility Additions available from third-party developers for PageMaker 4.2 are:

► **Import That!** from Equilibrium Technologies imports graphics in a variety of non-Mac and other file formats



not accepted by PageMaker.

► **Rotate This!**, also from Equilibrium Technologies, lets users rotate placed bitmap graphics.



► **AA Picture Scale** from Integrated Software Inc. lets users scale images inside PageMaker.

Some of the formatting utilities available are:

► **Sonar Bookends** from Virginia Systems generates indexes and table of contents.

► **Tableau**, an Addition from Publishing Revenue Partners, manages and formats classified ads within PageMaker.

Text tools available include:

► **AA Text Fit** from Integrated Software lets PageMaker users adjust text parameters, including font size, leading, tracking and interparagraph spacing.

► **PMproKit** by EDCO Services Inc. is a collection of additions, including special modules for kerning, type distortion, rotating and merging, and setting up columns.

Additions available for color pre-press include:

► **BureauExpressPM** from Compuvation Inc. compresses PageMaker publications and automatically sends them to service bureaus that support BureauMaster production software. It includes a copy of BureauMaster.

Some general utilities and tools are:

► **Sonar Professional**, also from Virginia Systems, is both an application and Addition that together form a high-speed retrieval system capable of searching documents at more than 10,000 pages per second.

► **Azalea UPC** from Azalea Software Inc. generates bar codes for ZIP codes within PageMaker.

► **AA Document Report** from Integrated Software produces detailed reports on PageMaker documents, summarizing file formats, style sheets and fonts used in documents. — *By Connie Guglielmo*

ILLUSTRATIONS BY GARY JAEGER

Users of XTensions and Additions don't have to wait for Quark and Aldus to release new versions to get new features.

difference between the two technologies is how the add-on modules are created and implemented within the respective programs.

Three types of Additions can be created for PageMaker, according to Lisa Wise, manager of developer relations for Aldus. A text-based scripting language lets users easily create Scripts, similar to macros, for automating tasks commonly done with the keyboard or mouse.

For instance, users could create a Script that automatically reflows text into three columns throughout a document instead of having to reflow manually page by page.

Additions also allow developers, using the C programming language and Additions command and query languages, to create what the company calls Loadable Additions, which can handle more-complex tasks. Unlike Scripts, these Additions can include queries, perform calculations and repeat a sequence of steps. Loadable Additions are accessed via the PageMaker Additions submenu located under the Options menu.

The third type of Addition is a stand-alone module that offers a link between PageMaker and data contained in other applications. The stand-alone modules can run independently or from within other applications, such as databases or spreadsheets. They rely on the Macintosh's interapplication communications technology for System 7 and Dynamic Data Exchange for Windows to communicate between applications. Aldus has demonstrated the technology to developers and expects to see stand-alone modules on the market soon, Wise said.

What all Additions have in common is that they communicate with PageMaker via an interface manager. They operate outside of the PageMaker core and never become part of the actual program. Once an Addition is called on, it executes its functions through the interface manager and then returns control to the user. What that means is that the Addition tells PageMaker what to do, but not how to do it.

One of the main advantages of communicating via the interface manager, according to Wise, is that developers will not have to modify their Additions as new versions of PageMaker are introduced because they are written independently of the program.

In contrast, XTensions become part of XPress, operating as though they were part of the core program. Once an XTension is placed within the same folder as XPress, it accesses XPress' data structures and routines and appears within XPress' menus wherever the XTension developer believes it belongs.

According to Quark's Warren, XTension developers have not had any incompatibility problems running their XTensions within the newer versions of XPress. "In fact," Warren said, "the only XTensions we've had problems running with the new version are our own."

To date, XTensions, unlike Additions, has been a developer or programming-savvy user technology. XTensions are created on the Macintosh with THINK C, a C-language development tool from Symantec Corp. of Cupertino, Calif.

A user scripting language for XTensions, based on a runtime ver-

sion of the Frontier IAC and scripting technology from UserLand Software Inc. of Redwood City, Calif., will be bundled with XPress 3.2, which will ship in the first quarter of 1993. The scripting language can be used to write macro-like scripts as well as scripts that allow XPress to interact with other applications, Warren said.

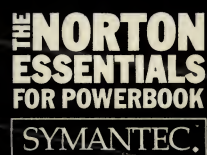
Off the hook? While most users agree that XTensions and Additions provide a way for users to get functionality that Quark and Aldus may never choose to include in their feature sets, they believe the technology should not be a reason for the companies not to continue to innovate.

Randy Searls of Searls Design in Owls Head, Maine, owns about 28 XTensions and is glad that there are developers filling specific market needs with XTensions. But he said, "Some XTensions are basic ideas that ought to be incorporated in Quark because they are basic features lacking in the program."

According to Searls, two features offered as XTensions that should be part of QuarkXPress are a table of contents and index generator. "I'd like to buy a lot more XTensions, but with budgets being what they are, I have to have a real reason for buying them. There has to be cost benefit."

Perhaps one of the greatest benefits to users of XTensions and Additions is that they no longer have to wait for Quark and Aldus to release new versions to get new features. Developers looking for market opportunities will continue to fill in those feature gaps for users. □

If this reminds you of your PowerBook after an hour or so, make its battery charge last up to twice as long with The Norton Essentials™ for PowerBook. It increases battery charge, makes your PowerBook easier to use, and keeps files synchronized – all without sacrificing performance. To learn more, dial FAST FAX 1-800-554-4403.*



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Utilities put the power in PBs

Packages can extend your portable's battery life, optimize limited disk and memory space, and synchronize files.

By Mitzi Waltz

Although some of Apple's latest PowerBooks are among the fastest Macs in the product line, making the most of the portable machines takes some work. However, vendors have come up with utilities that address the main sticking points with PowerBooks by extending battery life, reconciling files, optimizing the use of limited memory and disk space, and more.

Utility collections. Although some individual PowerBook utilities are available, especially as shareware, many have been incorporated into handy collections.

The first to come to market is Connectix PowerBook Utilities (CPU) from Connectix Corp. This utility set combines flexible security and power-conservation features in an affordable package.

"I'm an outside sales rep, so I use my PowerBook quite a lot on the road to keep track of names and phone numbers of buyers," said Steve Sharbach, an account executive for Computers Plus, a computer reseller based in Sunnyvale, Calif. For Sharbach, the most important part of CPU is its battery-conservation features. "Before, it just seemed like a charged battery didn't last very long," he said.

Now that he can reduce battery usage and monitor the need for recharging, there's less danger of losing power at a critical moment, he said. CPU saves battery life by dimming backlighting and resting the processor, system and hard drive after user-set periods of inactivity.

"[CPU] is easy to customize to fit your particular situation," Sharbach said. "The defaults already are set to what most users would want, and they've done a good job of giving you options."

Security features in CPU include password protection at start-up and wake-up time. In addition, its PowerDialogs and MenuPower utilities let users set options for such tasks as creating hot keys, making dialog-box selections and choosing menu items from the keyboard.

Synchronization and more.

Other vendors also have utility packages in the works. Some may be holding back, waiting to see how the first two or three fare in the marketplace.

But data-synchronization utilities, such as PowerMerge from Leader Technologies Inc., already have made their mark. In fact, according to vendors, data-synchronization features probably will become a standard part of most PowerBook

utility packs. Data-synchronization utilities help users ensure that data stored in more than one location matches. (For more information on PowerBook file synchronization, look for a special report on mobile computing in the Jan. 11 issue of MacWEEK.)

One package of special interest in this area is Magnet, a utility from No Hands Software that automates synchronization and other important tasks, such as backup and retrieval. Magnet also can perform multiattribute searches for files or text within files.

Randall Hull, principal of Design Consultancy, also of Sunnyvale, has quickly come to rely on Magnet. He has a Quadra for use at the office and a PowerBook 140 for use on the road. Magnet is Hull's only tool for file synchronization and complex searches, and he said he hopes to press it into service as an automatic-backup utility soon.

"The fact that it has such an intelligent search capability is really useful," Hull said. Magnet is much faster than the Mac's built-in file searching, he added.

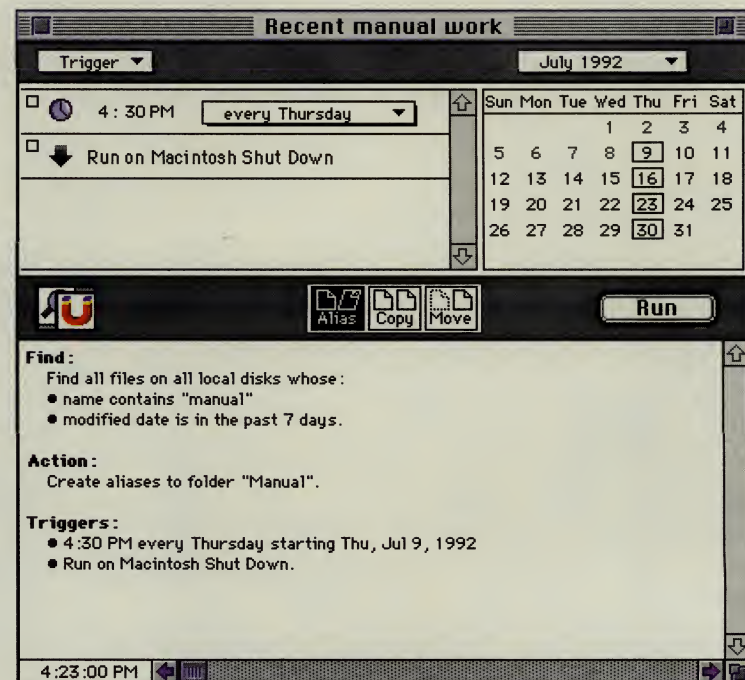
The 1993 crop. This year will bring on the challengers. The packages causing the most industry buzz are due from Symantec Corp. and Baseline Publishing Inc.

Last month, Symantec released The Norton Essentials for PowerBooks (NEP), a set of utilities offering functions similar to Connectix's CPU. Symantec's new offering is based on Guy's Utilities for Macintosh (GUM) PowerBook Edition, a never-released set of programs developed for After Hours Software. NEP contains a control panel where users access modules for controlling different aspects of PowerBook performance.

Baseline's offerings will include PowerBoost, with functionality similar to CPU's with a couple of bonuses: a modem-light simulation utility and the capability to run screen-saver modules compatible with Berkeley Systems Inc.'s After Dark; PowerSync, a data-synchronization utility; and PowerStart, a RAM disk utility. These three utilities also will be available as a combination package, tentatively titled The Power Suite.

Baseline President J.H. Alexander said he expects RAM-drive utilities to be an especially hot area. Connectix already offers Maxima, which automatically loads programs and system files to the RAM disk and saves them back to disk on shutdown. "Anything that keeps [PowerBook users] from doing things mechanically will save battery life," Alexander said.

With PowerBooks quickly becoming a large and growing market, look for growing numbers of PowerBook utilities that will provide mobile users with ways to customize and add functionality to their machines. □



Magnet from No Hands Software can automate a variety of tasks. Here Magnet was set up to create an alias for all related files and save these aliases to one location.

PowerBook sales tools keep work up to date

Vendors use

AppleTalk

Remote

Access to help

businesses

manage

outside sales

offices.

By Mitzi Waltz

PowerBooks in combination with contact-management packages are creating indispensable tools for many salespeople. The pairing lets your sales force carry contact and document databases and, when equipped with AppleTalk Remote Access, provides easily made links to corporate databases while on the road.

Contact-management software helps track prospective and current clients, retains information on dates and types of contacts or sales made, reminds users of calls or letters to be sent, and generates forms and letters.

AppleTalk Remote Access (ARA), especially with support from dial-in servers such as Shiva Corp.'s LanRover/E, makes it simpler for users in the field to tap into their company's network. Until recently, ARA was bundled with PowerBooks. ARA now costs \$199.

Remote access to databases.

Chang Laboratories Inc., which claims more than 80 percent of

the contact-management market with its C•A•T III contact-management program, is prominent among ARA supporters. Bill Thomas, a partner at Northampton, Pa.-based Sales Automation Inc., said he's quite pleased with Chang's PowerBook/ARA support.

"C•A•T has what it calls a '.chg' file, and within that file is the information that has changed since you left the office," Thomas said. This file can be merged with the main database on-site or, using ARA, via modem, he said.

Thomas said C•A•T has other features that help him in the field. "The ability to recreate the forms that we normally use really cuts down on the paperwork—you can fax them from the PowerBook or send them electronically," he said. "And compared with traditional productivity tools, such as [Microsoft] Excel or [ACI US Inc.'s] 4th Dimension, C•A•T is much more efficient in the way it stores documents and data."

Thomas said he would like to see

a version of C•A•T that lets multiple salespeople exchange data with a central database at the same time.

Remote is where it's at.

C•A•T's competitors also promote their capabilities to provide remote access.

SuperOffice from SuperOffice Corp. also supports remote updating and downloading via ARA. Kurt Lauchner, president of Pippin Publishing, uses SuperOffice to move data between his PowerBook 170 on the road and the Mac IIx at his Ann Arbor, Mich., headquarters.

"I'm out to trade shows a half dozen times a year, and others here do a bit more grass-roots sales work," he said. "My primary use [of SuperOffice] is making 'tickler' files and using the calendar."

Most contact-management packages generate 'ticklers,' which are reminders to users of appointments, calls or other sales activities.

Lauchner said the contact-management features of Super-

Vendors find ways to build better mouse

If you think you've outgrown your mouse, try one of these radically designed pointing devices.

By Eric J. Adams

There are plenty of reasons why a traditional mouse may not be the best pointing device for your needs. You may find a mouse requires too much desk space or that it's inaccurate or clumsy. Like many, you may believe that a mouse is an ergonomic danger zone or simply that it doesn't feel right.

Luckily, there are plenty of alternatives to the ubiquitous mouse. And while these unconventional pointing devices won't make the mouse extinct anytime soon, they can do plenty to bring comfort and extra options to your workspace.

In fact, with the Apple Desktop Bus design, you chain two or more pointing devices simultaneously. "I use the [Kensington Microware Ltd.] Turbo Mouse 4.0 when I need fine control and pixel-by-pixel resolution, but I go back to the mouse instinctively for other things," said Mark Meisel, director of technical services at Ehrlic Associates Inc., an Oradell, N.J., multimedia publishing company.

Trackballs. Kensington's Turbo Mouse is one of several available trackballs, the most common

alternative to the conventional mouse. A trackball is an "upside-down mouse" where the cursor is moved by rolling a stationary ball rather than rolling a ball in a housing case along a pad.

Trackballs feel more precise because users need to control only the movement of their fingers, whereas mice require control of the entire arm. And accuracy is a key ergonomic consideration, according to Dr. Arnold Wexler, an occupational medical specialist with Chevron Corp. in Richmond, Calif.

"Accuracy is important because it requires less repetitive movement and makes the user feel less stress," Wexler said.

Kensington's Turbo Mouse 4.0

boasts a proprietary technology it calls "brilliant cursor." By clicking on a trackball button or keyboard modifier key, the cursor will jump among any number of default or user-designated points on the screen, such as the File and Edit menus, and the Trash icon. Another click and the cursor instantly returns

to the original screen position.

"We use large monitors, and it speeds up operations because you don't have to manually travel so much with the cursor," Meisel said.

Orv Jordahl, senior manager of information systems at McDonnell Douglas Corp. in Huntington Beach, See Mouse, next page



A plethora of input devices (from left to right, top to bottom): Kraft Systems' Trackball ADB; DynaPoint's Cordless Super Mouse; Kensington Microware's Turbo Mouse 4.0; Appoint's Thumbelina and MousePen Pro; CoStar's Stingray; and Altra's Felix.

Office are well-organized, helping him keep on top of textbook sales. "I like being able to click [on a checklist] when we do a mailing," he said. "We have 18 things we can send, and the checklist has an additional information field for important data on clients."

Lauchner updates the Super-Office database at his main office with his activities from the field via ARA. He also taps into the main database to find out what kind of

contact another salesperson may already have with a prospective client. "If you meet a new client, you want to make sure nobody else has already written them or called," he said.

However, use of ARA is limited for now by Apple's server implementation, which requires a Mac and a modem attached to each phone line used for ARA access. Shiva's LanRover/E, a stand-alone, multiline server, is the first Macin-

tosh device to let several remote employees access the corporate network at once.

Other vendors, including Apple; Cayman Systems Inc. of Cambridge, Mass.; Centrum Communications Inc. of San Jose, Calif.; and Global Village Communication Inc. of Menlo Park, Calif., are working on similar products. Companies with large sales forces likely will welcome the cost savings and convenience these offer.

remote-updating feature with multi-user access to server-based contact files, according to the company.

PowerBook special needs. WestWare Inc. is trying to provide more basic support for mobile users by optimizing its newest version of Contact Ease 2.0 for the PowerBook. Due for release soon, the PowerBook version of the program will

from the main office as well.

Beta-tester Steve Ganz, territory manager for Multi-Ad Services Inc. of Peoria, Ill., has been synchronizing sales data with the company's main office using Contact Ease 2.0 on his PowerBook 145. "[Version 2.0] is much faster than the older version, and I have been extremely satisfied," he said, adding that WestWare has quickly addressed the few bugs he's discovered.

Ganz said he likes how the program automatically adjusts its display to fit the monitor in use. "I have my PowerBook plugged into a 14-inch monitor at home," he said. "When I unhook it, [the program] automatically goes to the smaller size."

As new tools develop, PowerBook-equipped salespeople are testing the boundaries of remote computing. "With some of these advances, salespeople may never even have to visit headquarters," said George Chin, director of value-added reseller channels for Chang Labs. "When I'm in the field myself, I can concentrate 100 percent on making contacts and talking to customers and feel sure that mailings and everything else are being taken care of by clerical workers at the corporate site." □

One of the work areas with Chang Laboratories' C•A•T III allows users to schedule sales appointments.

Document List						
Work	To-Do	Priority	Item	Sched	Print	Send
			Allen & Associates			
			All activities			
			All time periods			
W	T	P	Date	Time	Description	Activity
✓			3/21/90	12:19	Allen @ Allen & Associates	P: Survey (CAT 3)
✓			3/21/90	12:19	Allen @ Allen & Associates	P: Survey (CAT 3)
✓			3/22/90	12:19	Axelrod @ Allen &	P: Survey (CAT 3)
✓			3/22/90	12:19	Di Santini @ Allen &	P: Survey (CAT 3)
✓			3/23/90	9:54	Allen @ Allen & Associates	D: Sales Order Pad
✓			3/23/90	10:06	Allen @ Allen & Associates	L: Seminar thanks
✓			3/23/90	10:06	Allen @ Allen & Associates	L: Seminar thanks
✓			3/23/90	10:06	Axelrod @ Allen &	L: Seminar thanks
✓			3/23/90	10:06	Di Santini @ Allen &	L: Seminar thanks
✓			3/23/90	10:06	Lawrence @ Allen &	L: Seminar thanks
✓			3/23/90	10:06	Madison @ Allen &	L: Seminar thanks
✓			3/23/90	10:06	Petrie @ Allen & Associates	L: Seminar thanks
✓			3/23/90	10:06	Trexler @ Allen &	L: Seminar thanks
✓			3/23/90	10:07	Allen @ Allen & Associates	L: Demo f-u letter
✓			3/23/90	10:07	Allen @ Allen & Associates	L: Demo f-u letter
✓			3/23/90	10:07	Axelrod @ Allen &	L: Demo f-u letter
✓			3/23/90	10:07	Di Santini @ Allen &	L: Demo f-u letter
✓			3/23/90	10:07	Lawrence @ Allen &	L: Demo f-u letter
✓			3/23/90	10:07	Madison @ Allen &	L: Demo f-u letter
✓			3/23/90	10:07	Petrie @ Allen & Associates	L: Demo f-u letter
✓			3/23/90	10:07	Trexler @ Allen &	L: Demo f-u letter
✓			3/23/90	12:19	Lawrence @ Allen &	P: Survey (CAT 3)
✓			3/23/90	12:19	Madison @ Allen &	P: Survey (CAT 3)
✓			3/26/90	12:19	Petrie @ Allen & Associates	P: Survey (CAT 3)

Multi-user power. ARA has increased mobile users' demands for multi-user capabilities in contact-management databases. Many contact-management packages provide some degree of multi-user functionality.

Market Master for the Macintosh from Breakthrough Productions, for example, provides multi-user functionality in a modular approach. Market Master's single-user version can be upgraded to a multi-user version. In addition, the company offers individual portable versions for mobile salespeople.

Leads! from Endpoint! Marketing Information Systems Inc. also combines an ARA-compliant

"With some of these advances, salespeople may never even have to visit headquarters."
— George Chin

require less RAM and disk space and will be equipped with Cyberswap, a built-in data-synchronization utility.

Like similar stand-alone utilities, Cyberswap will reconcile the main Contact Ease database with new information as it comes in from field salespeople, and it will provide them with the latest data

Mouse

From previous page

Calif., chose a trackball for another reason. "The ball on the [CoStar Corp.'s] Stingray is about the same size as in the PowerBook. So a 'two-ball' mentality isn't needed."

Jordahl, who makes purchasing decisions for more than 1,500 Mac users, said he also liked the low-profile design of the Stingray. "Its sloping sides, which make it look like a stingray, let users keep their wrists relatively limp during operation and conforms to the natural rest position of the hand," Jordahl said.

Adam Engst, editor of TidBITS, a computer newsletter published in Redmond, Wash., likes the MVP Mouse from Curtis Manufacturing Co. because it comes with an optional foot switch. "The MVP Mouse is an unimpressive trackball, but what separates it is the foot switch."

Engst programs the switch to perform menu or key operations normally done with the one or two buttons of the mouse. "I have carpal tunnel syndrome, and the foot switch offloads a lot of the work normally done with my hands. Moving a mouse is not bad for you, but when you click and hold, you're fighting yourself," Engst said. Kraft Systems Inc. also bundles a foot switch with its Trackball ADB.

Unlike most other trackballs where the ball is rotated with the index or middle finger, the ball on the TrackMan from Logitech Inc. is rotated with the thumb, and the three buttons are operated with the first three fingers.

Another trackball with a radical design is EMAC's Silhouette, with its brightly colored interchangeable "billiard balls." Company officials, however, said they are phasing out the product.

Voice balls. Trackballs are becoming fairly common, but Catharine Bushnell believes voice-activated pointing devices make the best mouse partner. Bushnell, who is president of The Sisson Group Inc., a full-service graphic design house in New York, uses the Voice Navigator II from Articulate Systems Inc.

The Voice Navigator II allows you to control any application by voice, via microphone, using spoken commands to execute any function performed with keyboard and mouse.

You can "train" the Navigator to understand your phrasing or to associate a phrase with a series of commands. "When I give the command 'good night,' the Voice Navigator unmounts my SyQuest, empties the Trash and shuts down my machine," Bushnell said.

More than a curiosity, Bushnell said she uses it regularly, particularly for menu and tool selection. "It lets me keep my cursor on the page. It saves a lot of mouse miles and time," she said.

The device is available with a sound input board or for Macs factory-equipped with a sound input port.

MacSema Inc. also sells a voice-activated pointing device. The company said it soon will announce major changes to its Voice Express device.

Truly radical. If you don't like the current offerings of mice, trackballs or voice-activated devices, there's more. The Felix from Altra Inc. is designed as an extension of your fingertip. You grasp a small handle with your thumb and index finger. The device sits in a 6-square-inch base, but the cursor movement is accomplished by moving the handle in a 1-inch square.

Mouse shells and mice without tails

If you think your mouse is almost but not quite perfect, you may want to consider several alternatives. Cordless mice are available from several vendors including Spark International Inc., makers of the Spark Cordless Mouse; and DynaPoint Inc., which markets the Cordless Super Mouse made by Z-NIX Co. Inc.

Both devices use rechargeable batteries and infrared beams to send cursor movement signals to a base unit attached to the computer. Though cordless mice offer the advantage of one less chord to tangle, they also require you to aim the mouse in the general vicinity of the receiver. This is not a problem for most but is certainly a consideration.

Finally, if you like your Apple-issue mouse just fine but wish it was contoured more ergonomically, check out the MouseTopper from Contour Designs. According to John Fletcher, Contour product manager,



GIAMPIERO BENVENUTI

The Spark Cordless Mouse from Spark International.

er, the MouseTopper is a replacement cover for the Apple mouse that provides more comfort without the cost of having to buy a new mouse. — By Eric J. Adams

Todd Meyers, art director at Hallmark Cards Inc. of Kansas City, Mo., likes the 320-dpi resolution of the Felix when working in page-layout and illustration packages. "We tried several alternatives and this worked best for drawing," said Meyers, who also liked the speed at which the Felix can take him from one end of the screen to the other. "The control area is only 1 inch, so you can fly."

Appoint offers a pair of interesting and unquestionably different pointing devices. The first is Thumbelina, a tiny 1.6-inch-square handheld device that is billed as the world's smallest trackball. Fully functional with three buttons, Thumbelina is designed primarily

for stand-up presentations but also comes with mounting hardware for a desktop or PowerBook.

Appoint's MousePen Pro looks like a pen with a tiny trackball substituting for the ink tip. You can use the supplied mouse pad or use the MousePen on your pant leg or other irregular surface. The buttons are positioned on the front of the device where your index finger naturally falls.

Of course there's also a long list of graphics tablets, task-specific input devices, portable devices and third-party mice to choose from, along with Apple's new ergonomic mouse due out this month — enough choices to make anyone happy. □

Product Info

DTP ADD-ONS

ALDUS CORP.
411 First Ave. S., Seattle, Wash.
98104-2871
Phone (206) 622-5500; fax (206) 343-4240

AZALEA SOFTWARE INC.
Azalea UPC: \$129
P.O. Box 16745, Seattle, Wash.
98116-0745
Phone and fax (206) 937-5919

COMPUATION INC.
BureauExpressPM: \$1,495 to \$2,995
820 N. University Drive, State College, Pa. 16803
Phone (814) 238-2120;
fax (814) 238-2246

EDCO SERVICES INC.
PMproKit: \$149
12410 N. Dale Mabry Highway,

Tampa, Fla. 33618
Phone (813) 962-7800 or (800) 523-8973; fax (813) 960-2356

EQUILIBRIUM TECHNOLOGIES
ImportThat!: \$149; **Rotate This!:** \$49
475 Gate Five Road, Suite 225, Sausalito, Calif. 94956
Phone (415) 332-4343 or (800) 524-8651; fax (415) 332-4433

INTEGRATED SOFTWARE INC.
AA Picture Scale: \$99; **AA Text Fit:** \$99; **AA Document Report:** \$149
475 Park Ave. S., New York, N.Y. 10016-6901
Phone (212) 545-0110; fax (212) 545-0198

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Tableau: \$695
200 Dufferin St., Suite 1111, Toronto, Ontario M6K 1Z4, Canada
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1800 Grant St., Suite 200, Denver,

Colo. 80203
Phone (303) 894-8888;
fax (303) 894-3399

VIRGINIA SYSTEMS
Sonar Bookends: \$129.95;
Sonar Professional: \$795
5509 West Bay Court, Midlothian, Va. 23112
Phone (804) 739-3200;
fax (804) 739-8737

XCHANGE
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Newsletter: \$99 per year.
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Calif. 91411
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BASLINE PUBLISHING INC.
PowerBoost: \$69.95; **PowerSync:** \$99.95; **PowerStart:** \$59.95;
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Personal Market Master: \$395; **Market Master Manager:** \$595 (four-user version); \$895 (10-user); \$1,295 (20-user); \$1,995 (unlimited users) — both Market Master versions include Market Master Remote; **MultiUser Double Helix Kit:** \$495 for first four nodes
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Phone (916) 265-0911; fax (916) 265-8036

CHANG LABORATORIES INC.
C•A•T III: \$495

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Phone (408) 727-8096;
fax (408) 252-3081

CONNECTIX CORP.
Connectix PowerBook Utilities: \$99;
Maxima: \$69
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Leads! Personal: \$595; **Leads! Manager:** \$995; **Leads! Corporate:** \$1,795
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Phone (408) 737-3831
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PowerMerge: \$129

See Product Info, Page 146

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compatible with
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The KODAK DICONIX 701 Printer. The affordable, mobile printer that offers laser-quality text and graphics for both MACINTOSH and DOS Computers. And the only printer in its class to include a built-in sheet feeder.

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The 701 Printer measures a mere 7.4" x 11.7" and weighs in at under 6 lbs., making it easy to take along anywhere. And now you can even hook it up to your MACINTOSH Computer (including the PowerBook) with the KODAK Mpower 701 Interface Kit. And enjoy 300-dpi, laser-quality text and graphics in a whole new environment.

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KODAK DICONIX 701 Printer



Product Info

From Page 144

4590 MacArthur Blvd., Suite 550,
Newport Beach, Calif. 92660
Phone (714) 757-1787 or (800) 922-1787;
fax (714) 752-5960

NO HANDS SOFTWARE

Magnet: \$129.95
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Phone (415) 321-7340; fax (415) 321-2209

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SUPEROFFICE CORP.

SuperOffice: \$395 (single-user);
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The Norton Essentials for PowerBooks: \$129
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ALTRA INC.

Felix: \$118
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APPOINT

Thumbelina: \$99; **MousePen Pro:** \$99
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Phone (510) 463-3003; fax (510) 463-3204

ARTICULATE SYSTEMS INC.

Voice Navigator II: \$399, \$699 with sound board
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Mass. 01801
(617) 935-5656; fax (617) 935-0490

CONTOUR DESIGNS

MouseTopper: \$19.99
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Phone (415) 941-1000; fax (415) 941-1474

COSTAR CORP.

Stingray: \$129
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CURTIS MANUFACTURING CO.

MVP Mouse: \$149.95; **Foot Switch:** \$29.95
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DYNAPPOINT INC.

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Calif. 91748
Phone (818) 854-6440; fax (818) 854-6444

EMAC (A DIVISION OF EVEREX SYSTEMS INC.)

Silhouette: discontinued by company
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KENSINGTON MICROWARE LTD.

Turbo Mouse 4.0: \$169.95
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Phone (415) 572-2700 or (800) 535-4242;
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KRAFT SYSTEMS INC.

Trackball ADB with foot switch: \$129
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LOGITECH INC.

TrackMan: \$149
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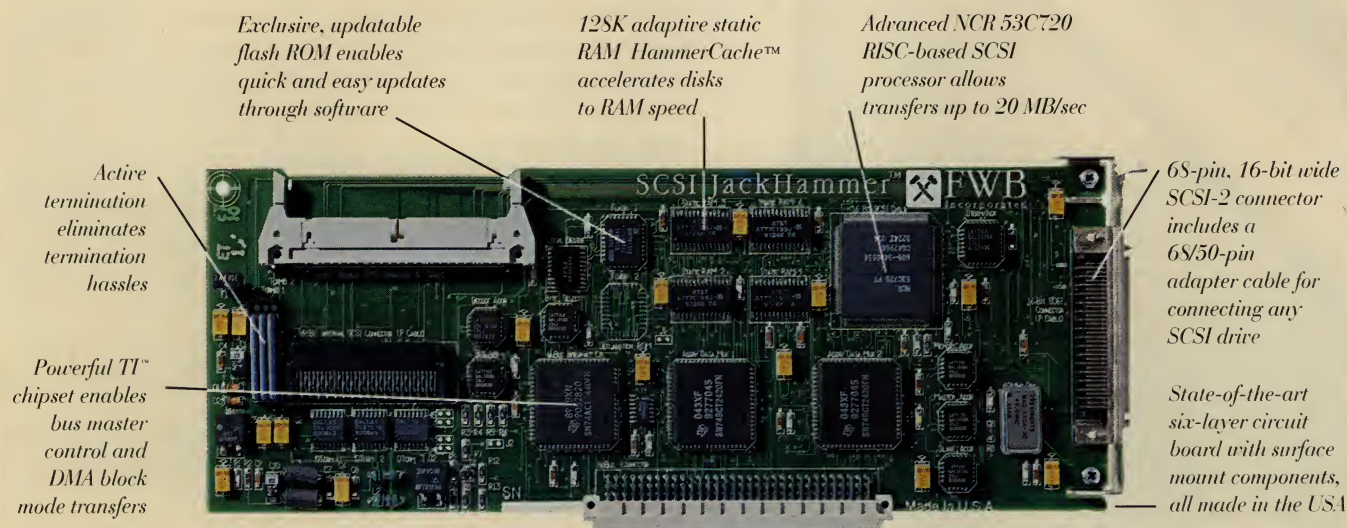
MACSEMA INC.

Voice Express: \$399
29383 Lamb Drive, Albany, Ore. 97321
Phone (503) 757-1520; fax (503) 757-1146

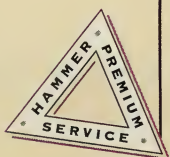
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This is how you get ahead at the office. Especially if you've got a network file server. Or do professional-level color prepress. Or any other kind of disk-intensive work.

You simply get the SCSI JackHammer™—a RISC-based, 40 MHz NuBus™ SCSI-2 accelerator board that elevates the performance of any standard Macintosh® SCSI-1 drive to unheard-of speeds. Even on a Quadra®. What's more, there's a path to exploit not only today's Fast SCSI-2 drives, but the Wide SCSI-2 drives that will be available soon.

How fast is fast? FileMaker® saves in a third the time it takes on the current fastest hardware. Photoshop™ rotates 40% faster. And 4th Dimension™ exports twice as quickly.

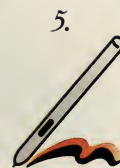
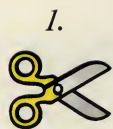
The JackHammer achieves these blazing speeds by freeing the CPU from having to oversee the drive's I/O operations. Which means that your Mac can focus its CPU power on what it does best: processing. Not only that, the JackHammer gives you all this at a very affordable price—and one that's even more affordable when you purchase it with an FWB drive.

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The SCSI JackHammer is available exclusively at authorized Hammer dealers worldwide. For more information and the name of the Hammer dealer nearest you, call FWB at (415) 474-8055, or fax us at (415) 775-2125.



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When the Mac first came around, everybody loved its *little rodent*. No cursor up.

No cursor down. Man, what a handy device. Then people got into graphic arts.

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size and weight of a fine pen. Now, creating art on a computer is as *natural* as

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way cool the ArtZ is, TAKE THIS SIMPLE TEST: (1) Cut out the

mouse at the top of the page. Blow it up if you like. Now (2) *trace it* with the mouse

on your computer. Then (3) print it,

and (4) scurry on down with both to your local Wacom dealer. Don't know where

one is? Just call 1-800-922-6613. When you get there, (5) trace the mouse on an

ArtZ. *Feels good*, doesn't it? Now (6) print it and (7) compare the two. OK? Now

(8) pull out your pocketbook. You've been doing *mickey mouse art* long enough.

*For the mice that run on a Mac, you can't call for pest control. But for the mice that run on top of a Mac, and under a Mac, and in the cupboards and stuff, call these guys: Orkin Exterminating.

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GORDON STUDER

MacInTouch RIC FORD

Photo CD magic uses new software tricks

Apple's new computers with built-in CD-ROMs bring Kodak's Photo CD graphics to the desktop, but the applications and documents are not what they appear to be.

BUGS & TIPS

Instant photos. When you buy a Macintosh IIx with an internal Apple CD-ROM drive, the system is preconfigured with all the hardware and software components needed for convenient access to images on Kodak Photo CDs.

A Photo CD appears on the Mac desktop when it is inserted into the drive. The Finder shows a volume containing a document called Slide Show, an application called Slide Show Viewer and folders of digital photographs at various resolutions. The icon for each photo is a thumbnail version of the photo.

Double-clicking a photo starts up Picture Compressor, an application included with QuickTime 1.5, and displays the image. Photos also may be opened from any application that

handles PICT files, from Apple's TeachText to Adobe Photoshop.

Slide Show is a series of low-resolution previews of the photos in a QuickTime movie format. You can configure Slide Show Viewer to switch to another application, such as Photoshop, and automatically open the photo at a chosen resolution when you double-click its preview.

Sleight of hand. This Mac-like collection of icons, pictures and applications is nothing but an illusion, however — one that depends on several props.

Neither Slide Show nor Slide Show Viewer actually exists on the CD-ROM. And the photographs, which may be opened as PICTs by many applications, are not really PICTs but are stored in Kodak's proprietary Photo CD file format.

The neat folders of photos separated by resolution do not really exist in the CD-ROM directory. The real files and directories, tucked away in a folder off to the side, have cryptic DOS-format names, lack icons and hold multiple resolutions per file.

Apple's magicians conjured up the illusions through a clever set of system extensions. The essential machinery consists of QuickTime 1.5 and two files on the CD-ROM Setup floppy bundled with Apple's drives: Foreign File Access (Version 4.0 or later) and Apple Photo Access.

At start-up time, Foreign File Access loads Apple Photo Access into memory, patching parts of the operating system and adding special features. When a Photo CD is inserted, the Mac operating system recognizes that it is not a hierarchical file system volume, eventually passing control to Apple Photo Access. Apple Photo Access creates the fake application and movie, plus the fake PICT files and photo icons.

When you open a photo as a PICT in a Mac application, QuickTime converts the image on the fly from Kodak's Photo CD format. (You cannot save files in Photo CD format, however. QuickTime supplies only a one-way translator, or decompressor.)

Without QuickTime, Photo CD files can be opened only with applications that support the proprietary file format directly, such as Kodak's Photo CD Access, or through Photo CD plug-in extensions for other applications.

If Apple Photo Access is removed, Slide Show and the Slide Show viewer vanish, along with the photo icons. Files on the Photo CD can no longer be opened as PICTs by applications. (A photo will still open as a PICT, however, if it was previously copied from the Photo CD to a Mac volume when Apple Photo Access was active.)

Without Foreign File Access, the operating system rejects a Photo CD as a foreign volume, and it cannot be used at all.

Volunteer assistants. The tricky software bundled with the IIx CD-ROM caught some third-party vendors by surprise, and technical documentation from Apple was still unavailable in mid-December.

By the time you read this, however, several third-party vendors should be delivering CD-ROM software that supports Apple Photo Access on non-Apple drives.

Access SuperCache CD, \$49.95 from Optical Access International Inc., and a beta release of FWB Inc.'s \$79.95 CD-ROM ToolKit both preserved the Apple Photo Access illusion in testing on a Toshiba XM-3301TA drive. These drivers work with many third-party

Ask David Ramsey

What fonts are necessary?

Q. I keep all my fonts in separate suitcases and would like to remove as many fonts from the System suitcase as I can. Which fonts should I leave in?

A. Fortunately, this isn't something you have to worry about with System 7. Whether you open the System suitcase with the Finder or use Font/DA Mover 4.1, simply select all the fonts you can and remove them. The Finder and Font/DA Mover are smart enough to leave the requisite minimum fonts behind.



Q. I was thinking of buying a PowerBook for use as a portable MIDI (Musical Instrument Digital Interface) system but heard that they don't work with MIDI devices. Why not?

A. You're almost right. Most PowerBooks can't handle large amounts of incoming MIDI data. Although I'm fuzzy on the details, it appears to have something to do with Power Manager interrupts that disable the serial ports briefly. This problem exists on the original PowerBooks and to a lesser extent, according to Apple, on the new 160 and 180. The Duos apparently do not have this problem, so get a Duo if you want to be safe.

Q. How can the new Express Modems for the PowerBook Duos be so cheap?

A. Because there's not much there. Most modems have two main parts: a "data pump" that handles the analog-digital conversion stuff and generates and interprets the tones you hear, and a dedicated chip set, which handles AT modem commands, various communications protocols, data compression and so forth. An Express Modem consists of only the data pump; the Duo's 68030 performs the rest of the functions.

This design enables Apple to make a small, inexpensive modem with capabilities that can be expanded through software. I admit to worrying, however, about the effect that handling a 9,600-bps, V.42bis download will have on a process running in the background — or, worse, what running something in the foreground will do to a software-controlled download going on in the background. At the time of this writing, the Express Modems aren't being delivered, so we'll have to wait and see.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

drives and claim special caching features for improved performance.

Trantor Systems Ltd. was finishing Version 3.02 of its \$99 CD-ROM software for third-party drives in mid-December, adding Apple Photo Access and multi-session support for several drives. FWB's CD-ROM ToolKit was due for release two weeks later.

The latest version of Apple's own CD-ROM driver supports single-session Photo CDs on the old Apple-

CD SC drive, as well as new drives.

FWB Inc. is at 2040 Polk St., San Francisco, Calif. 94109. Phone (415) 474-8055; fax (415) 775-2125.

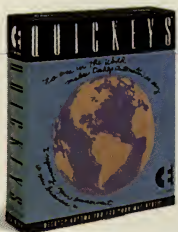
Optical Access International Inc. is at 800 W. Cummings Park, Suite 2050, Woburn, Mass. 01801. Phone (617) 937-3910 or (800) 433-5133; fax (617) 937-3950.

Trantor Systems Ltd. is at 5415 Randall Place, Fremont, Calif. 94538. Phone (510) 770-1400; fax (510) 770-9910. □

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There's nothing worse than spending hours figuring out a program that's supposed to save you time. New QuickKeys™ 2.1.3 with Instant QuickKeys™ 2.0 helps you set up dozens of shortcuts immediately...right out of the box.

Instant QuickKeys watches what you do, records your actions and makes short work of everything from opening your favorite application to running complex sequences like logging onto E-mail. Two new QuickKeys Extensions let you play QuickTime™ movies and

get the most from your PowerBook®. And, of course, QuickKeys is stable and reliable, whether you're running System 7™ or System 6. Unlock the power of your Macintosh® today with QuickKeys!

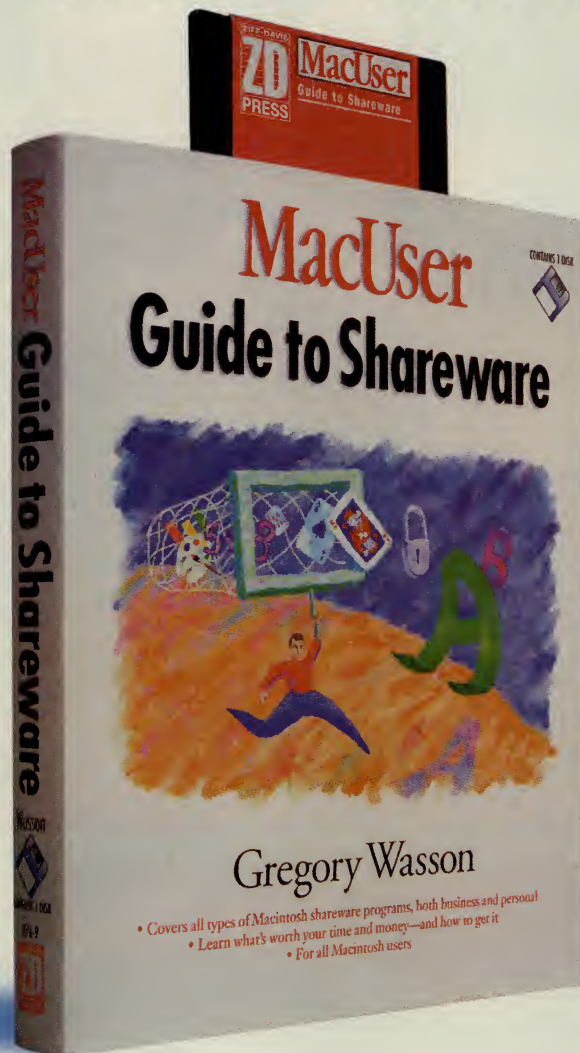
For as little as \$10, you can receive QuickKeys 2.1.3!

If you have version 2.1.2 (or 2.1.2a), your upgrade is just \$10, including shipping and handling.

Upgrade cost is slightly higher for all other versions. Order new QuickKeys today. Call 800-523-7638, Dept. CE209. Offer expires February 26, 1993.



Shareware To the Macs.



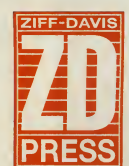
ISBN: 1-56276-076-9
Price: \$34.95

Maximize your share of the diverse and colorful world of Macintosh shareware with *MacUser Guide to Shareware* by popular *MacUser* writer and contributing editor Gregory Wasson. This all-new resource points you to the shareware that's worth your time and money—and includes some of the best of it on disk right inside!

Introductory sections of the text make sense of the shareware phenomenon, telling you what shareware is, where to obtain it, and when and how to register it. The rest of the book is a uniquely focused and resourceful shareware reference that sorts through the hype and pulls out the true winners in every software category: education, games, connectivity, security, text and graphics tools, and more.

All of the recommended shareware has been used and evaluated by *MacUser* editors, ZiffNet/Mac system operators, and ZiffNet/Mac subscribers. It's recommended because Macintosh experts know it's reliable and safe for your system—and because users just like you have found that it really works.

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* While supplies last.

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Introducing the revolutionary intelligent agent for the Macintosh®. Magnet's agents act as sophisticated personal assistants to automate all your file tasks, instantly expanding the functionality of your computer.

It's easy to create your own personal "intelligent agents". With just a few quick clicks, tell Magnet™ once what to do and when. Magnet will then carry out your instructions forever, reliably, without ever missing a deadline.

No other software can match Magnet's range of functionality or degree of automation. Whether you work with a PowerBook™, on a network, or on a stand-alone Mac, here is just a sample of what Magnet can do for you.

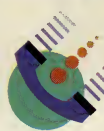
Attention PowerBook Owners



SYNCHRONIZE YOUR DESKTOP MAC AND POWERBOOK

If you work on more than one computer, Magnet is the easiest way to ensure you have the latest versions of important files on all machines. Every time you connect your two Macs, agents can automatically synchronize. Or, for complete automation, have your intelligent agents log your PowerBook onto your office Mac every night, synchronize your work in progress folders, and log off over the phone lines using AppleTalk® Remote Access. All without your supervision. Magnet is loaded with safeguards not found in other programs, so none of your important data is ever overwritten.

New Functionality For Your Macintosh



SCHEDULE FILE TRANSFERS OVER APPLETALK REMOTE ACCESS

Moving files over the phone lines on a preset schedule is functionality you'd expect from your mainframe, not your

Macintosh. But Magnet lets you do just that. Magnet will automatically establish a connection, transfer the files and break the connection. Magnet will even redial if the line is busy.

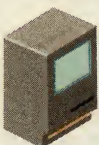


UPDATE SHARED FILES

To be sure you have the latest version of a status report, group calendar, or other shared document, simply have Magnet's agents regularly retrieve new or updated files from any node on your network.

PERSONAL FILING ASSISTANT

Magnet keeps the mess from building up on your desktop. It efficiently puts files away, moves documents and cross-references them with aliases according to your preset directions. Let Magnet automatically alias every file you've modified today into a folder on your desktop for easy access.

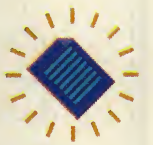


AUTOMATIC BACKUP

Only Magnet can back up automatically every time your designated syquest cartridge is inserted into a drive or when a server is mounted. Magnet can also back up your important files automatically at shutdown or at regular time intervals.

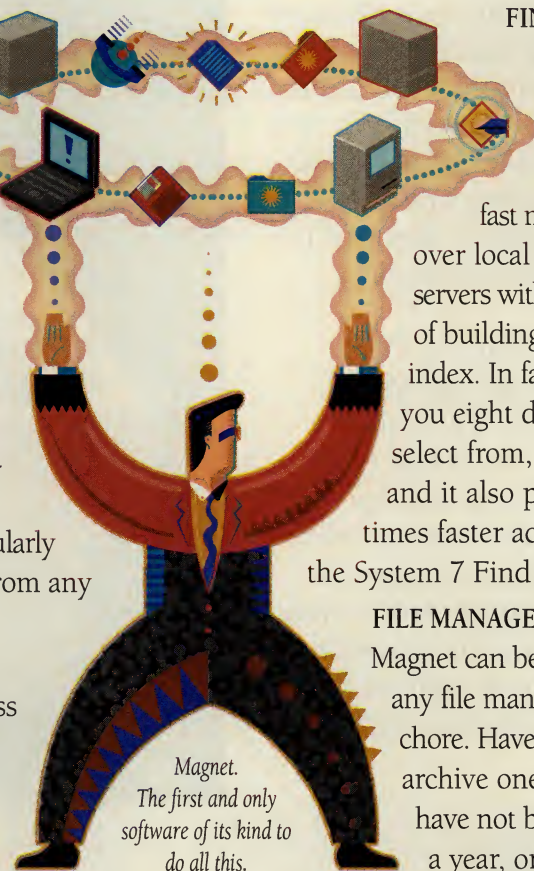
FIND FILES

Magnet's powerful search engine performs extremely fast multi-attribute searches over local disks and network servers without the disadvantages of building and maintaining an index. In fact, the software gives you eight different attributes to select from, including full text, and it also performs up to 10 times faster across a network than the System 7 Find File.



FILE MANAGEMENT

Magnet can be used for any file management chore. Have Magnet automatically archive one megabyte files that have not been modified for over a year, or automatically alias files to the Apple menu. To help you inventory your network, let Magnet retrieve aliases of applications and system folders for each node on your network.

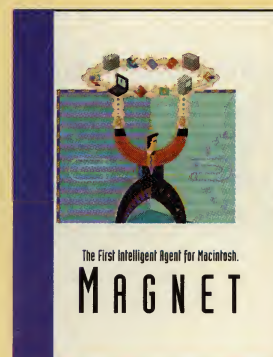


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Magnet Man illustration by Steve Lyons.

See us at Macworld Expo
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Finally, printing your envelope is as easy as printing your letter. Introducing Address Express.

With all the breakthroughs in office automation you'd think by now there'd be an easy way to deal with envelopes. Well, there is: The Address Express™ on-line addressing system from CoStar.

Address Express combines a specially designed inkjet printer with easy-to-use addressing software.

The printer (just 8" x 16" x 16" HWD) handles up to 100 envelopes, postcards, self-mailers or cut-sheet labels, as small as 3" x 5" and as large as 6.375" x 10.25". It plugs into one of your Mac's serial ports and there's an AppleTalk option so you can share the Address Express among several users.

The Address Express software

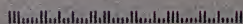


On-Time Delivery, Inc.
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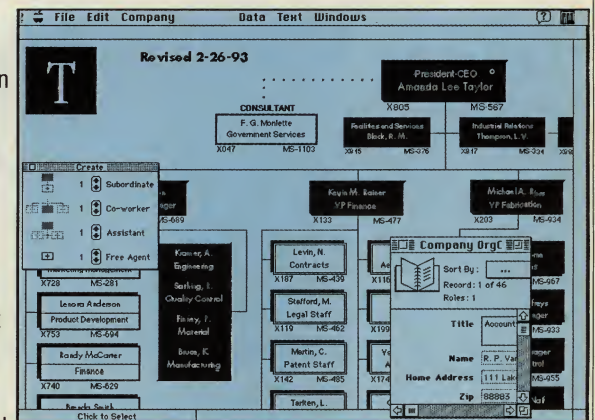
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2	4		DeltaGr		
1	1		Data De		
4	∞	D	DNA Ins		
			Gene Co		
2	∞	D	L Gene Co		
2	5	2	LabView		
1	1	D	L MacWr		
3	3	D	Mathem		
25	30	D	Micros		

Users		
Users: 328	Keys Out: 14	
John's SE/30	0023:07.7	
Lab Mac #14	0001:45.3	
Faculty Ilfx	0000:35.0	
LabView	2 5	
Instructor's Mac	0000:43.0	
Lab Mac #3	0000:20.2	
MacWrite II	1	
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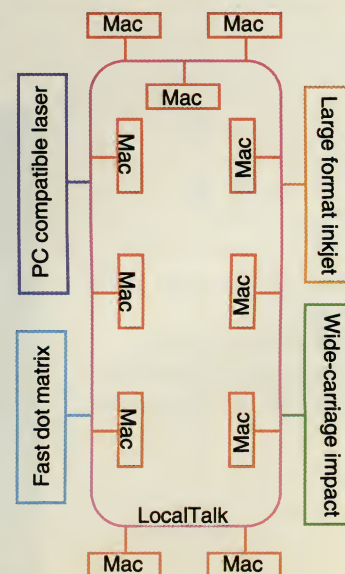
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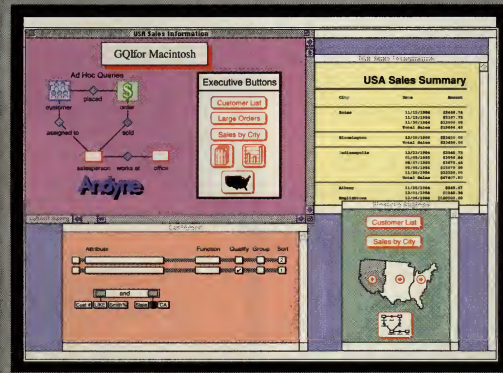


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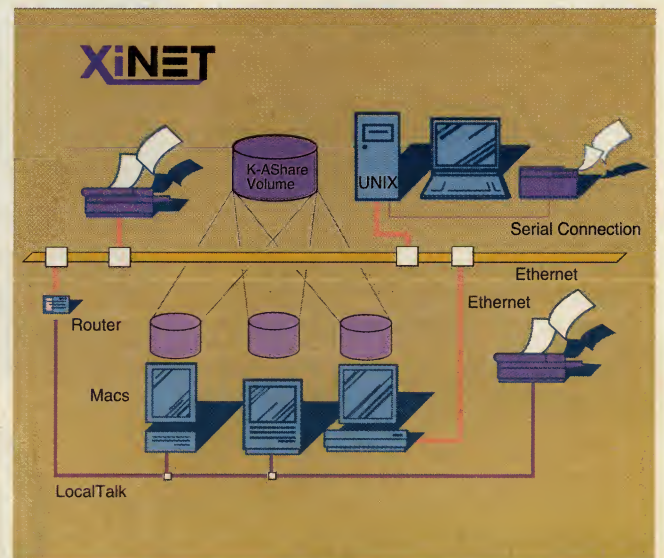


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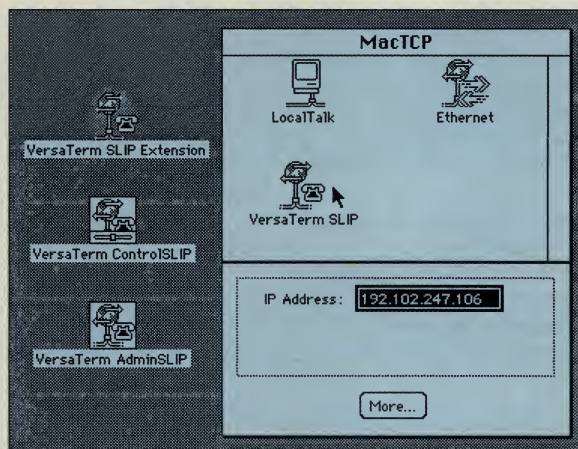
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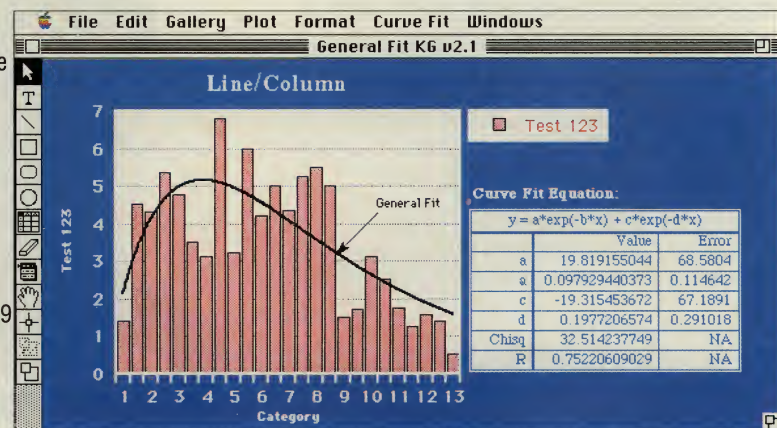
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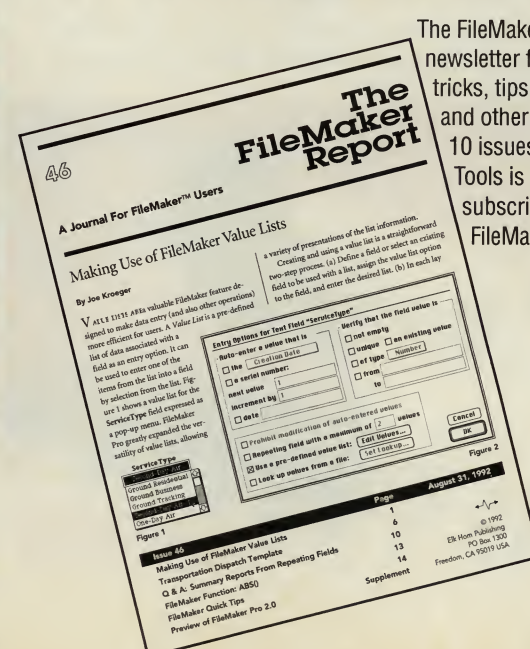
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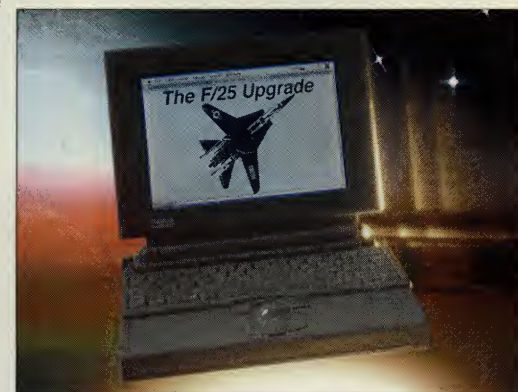
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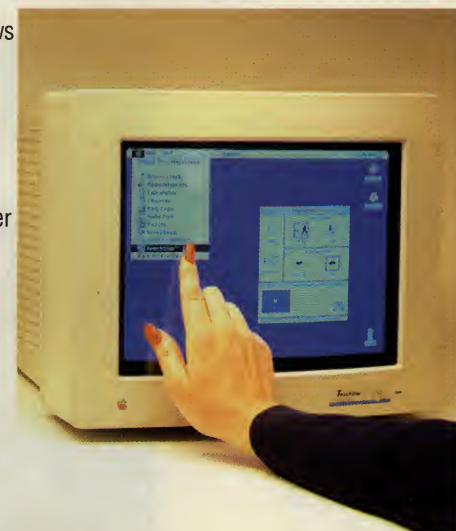
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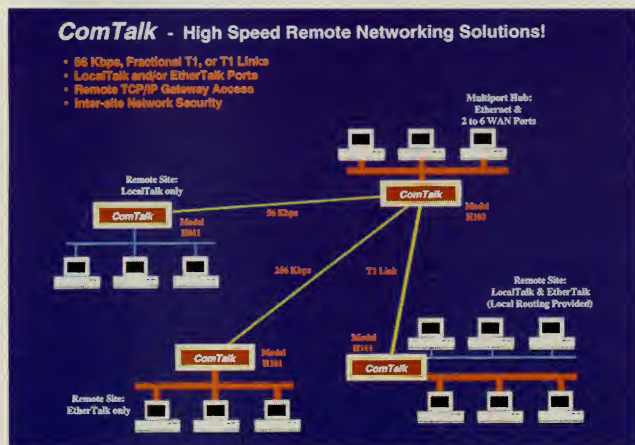


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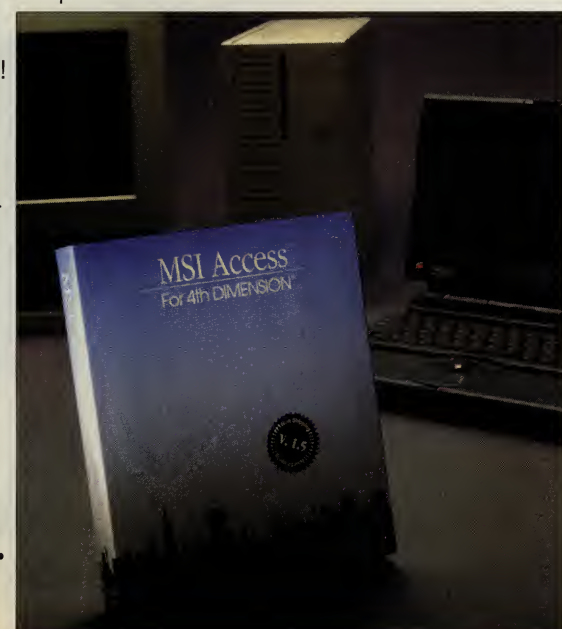
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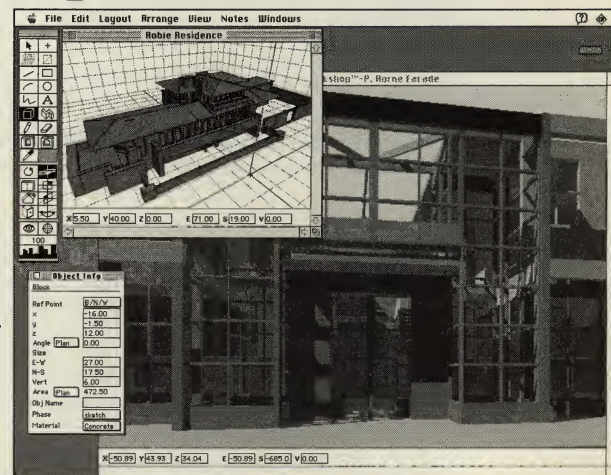


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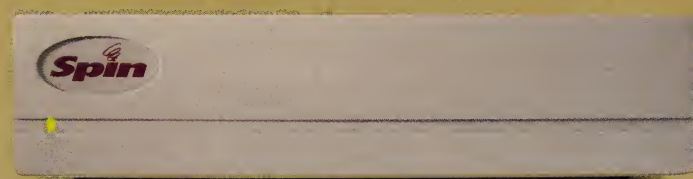
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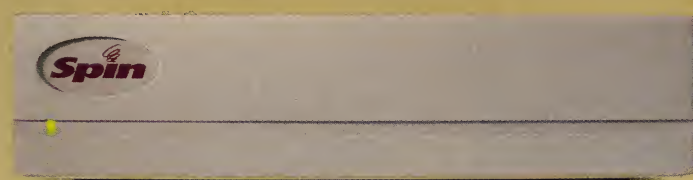
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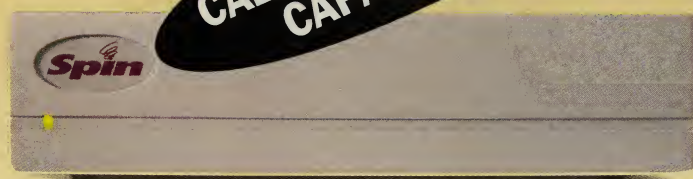
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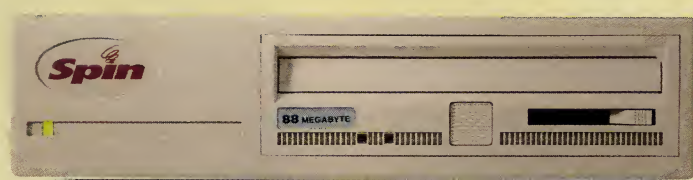
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Give one of these great drives a thirty day test drive, if you don't like it send it back for a full refund.

These High Capacity Low Power, Low Profile Drives Fit into all Macs from the Classic to the Quadra!

Conner 42 & 85mb Compact Value



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The fact that the Conner 40 and 85mb drives are Low Power (use only 2.1 watts), and Low Profile (1") make them perfect for the compact Macs. The high reliability (150,000 MTBF), performance (12ms), and two year warranties make them just right for all of the Mac! The Conner 40 is virtually the same drive found in most Classic and LC Macs, we think that is a great testament to the company.

Conner Specials

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<ul style="list-style-type: none"> 9 to 11.5ms access! - Incredibly Reliable! 85 & 170 LPS fit in all Macs Perfect for the power user! 	

Conner 212 & 540mb Intense Performance



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Conner 120 & 170mb The Perfect Upgrade



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C 120 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$318	\$378
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The Low Profile Low Power 120 and 170mb Conners offer a great option for the upgrading user. These drives install easily into any Mac from the classic to the Quadra 950! Look to the 170 for excellent cost per megabyte and the 120 as the perfect step up from a 40mb.

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Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. All new drives, preformatted with latest stable system software. Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee covers drive products only. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.

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"Fast"

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"Fast, inexpensive, good technical support, easy to use-this is a rare combination of qualities for a storage device." MacWorld 11/92

With the 64k read ahead cache, the short seek scanning function and a 3mbytes per second burst transfer rate you will find that these drive competes well with hard drives.

Totally Compatible ANSI/ISO Standard- Following the ANSI/ISO standard assures that your 128mb optical drive will always be able to interchange discs with other ISO standard drives. The 256 will read and write to all standard ISO disks as well

Lowest Cost per megabyte- With 3.5 optical media at only \$49.00 per 128mb disc your cost per megabyte is only 38¢, a fraction of the costs of Syquest or hard disks.

Includes Hard Disk Tool Kit from FWB- This is the program recommended for Optical drives by MacWeek Editors.

NuDesign

256mb 3.5" Optical Drive **1798.00**

128mb 3.5" Optical Drive **1148.00**

High Quality, Fast Backup At A Super Price!

These drives combine a very fast and accurate mechanism with optional Retrospect 3.1 from Dantz Development. Just look at these specifications...

- **10.9mb per minute average backup speed-** And High speed random access!
- **Four-head Direct-Read-After-Write data verification-** Assuring your data will be there when you need it.
- **Automatic built in head cleaner-** Allows your drive to remain clean and error free.
- **SCSI II compatible interface-** Giving your drive compatibility for years to come.
- **45 watt switching power supply & a metal cabinet -** Assures great power and protection.
- **MTBF 50,000 hours-** Means that your NuDesign drive will handle years of usage.

NuDesign 2.1 Gig DAT

With SoftBackup **998.00**

With Retrospect **1098.00**

NuDesign 5.0 Gig DAT

With SoftBackup **1398.00**

With Retrospect **1498.00**

MAC DIRECT
Specialists in Mac Storage

60 East Chestnut - 145, Chicago, IL 60611

Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. All new drives, preformatted with latest stable system software. Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee covers drive products only. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.

The NuDesign 2.1 & 5.0 Gig Dat Drives



800-621-8462

Hours: 8:30 - 8:00 CST, Saturdays
10:00 - 4:00

Technical Service and Order
Tracking (8:30-5:00) 312-664-8225

CONNER Special

Conner 85mb\$238
Conner 120mb\$318
Conner 170mb\$338

- Apple hard drive choice!
- Incredibly Reliable!
- Perfect for the Power User

MAC DIRECT

Specialists in Mac Storage

Conner The Drive That Apple Uses



For 2 years Conner has been one of Apples largest hard drive suppliers!

Conner Drives

		Internal	External
C 42 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$208	\$258
C 85 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$238	\$288
C 120 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$318	\$378
C 170 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$338	\$398
C 212 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$468	\$528
C 540 MB	3.5", 8.5 ms, 4500 RPM, 2 yr Warr,	\$1098	\$1148

These new Conner drives are so reliable, that Conner has been one of Apples largest suppliers of drives. The 150,000 hours Mean Time Between Failure and the incredible speed of the 540 are just two reasons to buy a Conner. Give us a call and we'll tell you the rest...

Fujitsu Drives

	Internal	External
330 MB 3.5" 9ms, 5yr warr, 200,000 MTBF	\$998	\$1048
425 MB 3.5" 9ms, 5yr warr, 200,000 MTBF, MacWorlds Editors Choice!	\$1028	\$1098
520 MB 3.5" 9ms, Fast SCSI, 5yr warr, 200,000 MTBF	\$1028	\$1098
1.2 Gig 5.25" 11.5ms, 5yr warr, (MacWorlds Fastest Gig!)	\$1498	\$1598
2.06 Gig 5.25" 11.5ms, 5yr warr, (5,400RPM & Fast SCSI)	\$2498	\$2598

*Mean Time Between Failure is the average life expectancy of a drive.

The Fujitsu PicoBird 4 Drives 520, 425, & 330mb



Fast and Reliable!

The NuDesign 3.5" Optical MacWorlds Editors Choice



Optical Drives

NuDesign 3.5" 256mb Optical\$1798

NuDesign 3.5" 128mb Optical\$1148

- MacWorlds Editors Choice!, Nov. '92
- "Fast, inexpensive, good technical support, easy to use-this is a rare combination of qualities for a storage device"
- 30ms access time ■ Includes cartridge

Ricoh 600mb Optical\$2198

600mb HyperSpace\$2198

- Read write reliable storage ■ Includes cartridge
- Great for archiving, color scans, etc.

Toshiba CD ROM

Toshiba 3301\$538

- Includes driver CD carrier and cables
- 325ms access time
- MacWorld and MacUsers Highest Rated!

Toshiba 3.5" 1200mb & 830 mb

Toshiba 1200mb 3.5"\$1698\$1748

Toshiba 830mb 3.5"\$1268\$1328

- 12.5ms Average Seek Time ■ 256k cache ■ SCSI-2
- Internal for CI, Mac II, Quadra ■ Perfect for DigiDesign!

SyQuest Removables

44MB Removable.....\$448.00

88MB Removable.....\$598.00

- 19ms Access time
- Both Drives include Cartridge
- Dual AC Outlets, 40 Watt power supply
- SCSI Select and 2 Year Warranty

DAT Drives

NuDesign Dat 2.1Gig capability

With SoftBackup\$998

With Retrospect.....\$1098

NuDesign 5.0 Gig Compression Dat

With SoftBackup\$1398

With Retrospect.....\$1498

- Up to 15 mb per minute backup time
- Includes SoftBackup II for Fast network and unattended backup capabilities

NuDesign 2.1 Gig Dat \$1098



NuDesign Dat 2.1 Gig capability

With SoftBackup\$998

With Retrospect\$1098

- Up to 2.1 Gig per tape
- Our best buy ever on DAT!
- Up to 10 mb per minute backup time
- Available with a complete version Retrospect for Fast Network and unattended backup capabilities.

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Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. All new drives, preformatted with latest stable system software. Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee covers drive products only. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.

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Technical Service and
Order Tracking (8:30-5:00) 312-664-8225

MAC DIRECT

Monitor Special

Sampo 20" Color\$1298

- Two Page displays
- Perfect for DTP & CAD/CAM
- Include Interface cards

Trinitron 19" Color ..\$1998

Full Page Display.....\$398



14" Sampo Color.....\$398

- Plug compatible with the IIsi, Ci, and the LC



14" SONY Trinitron.....\$698

- SONY 1304 for the Mac LC, SI, Ci and Quadra



16" SONY Trinitron..\$1098

- Plug compatible with the Quadra
- Plug compatible with the Ci, SI and LC at 640x480

SAMPO 20" Color System 1298.00



Sampo 20" 8 Bit Color System\$1298.00

24 Bit Color System.....\$1998.00

Mono System\$698.00

Grey Scale System\$998.00

- The SAMPO is a high quality dual page display without the high cost!
- Includes 1 bit, or 8 bit Bit Video board and cable
- 2 page display supports all Mac IIs', the SI, SE-30, SE and the LC

Trinitron 19" Color System

8 Bit System\$1998.00

24 Bit System\$2598.00

- The Trinitron, 19" is a Sony OEM Trinitron, and one of our best buys! True Trinitron color at a great price!
- Includes 8 bit or 24 Bit Video board and cable
- 2 page display supports all Mac IIs', the SI, SE-30, and the LC

NuDesign Full Page Grey Scale\$398.00

- Plug compatible with Si, Ci and Quadra (16 levels of Grey).
- Available with 1 Bit interface card for all Mac IIs', SE-30, SE and LC \$488.00.



19" Trinitron System

- With 8 Bit interface\$1998
- With 24 Bit interface\$2598



NuDesign Full Page Display

- Grey Scale for Ci, Si, Quadra.....\$398
- Ii, IIfx, FX, SE30, 1 Bit\$488



20" Sampo Color System

- With 8 Bit interface\$1298
- With 24 Bit interface\$1998



UMAX 600 DPI Color Scanner

Umax UC-630 With PhotoShop.....\$1098.00

Transparency/Slide Scanner Option.....\$798.00

Automatic Document Feeder\$498.00

- Rated four mice by MacUser (Dec '91) ■ Rated fastest by MacUser(Dec '91)
- "Boasts the highest vertical resolution..." " Umax produced the best images..." MacUser
- "Tamarack and Umax excel in speed and color accuracy" MacUser

UG-630 With PhotoShop Grey Scale Scanner\$898.00

Umax UC-1200S With PhotoShop\$3298.00

Transparency/Slide Scanner Option.....\$898.00

- Incredible 1200 dpi scanning res. recognizes 1 billion colors internally
- Single-pass design increases scanning speed
- Includes Adobe Photoshop

Umax 600DPI Greyscale With Typereader OCR

Software, Ofoto and Publish It,\$898.00

- An incredible OCR package with over \$1000 in software alone,

Scanner Special

Umax UC-630\$1098

With Photoshop

- Rated 4 Mice by MacUser
- Rated Fastest by MacUser
- 8 1/2 x 14 Scanning area

Umax UC-1200S....\$3298

With Photoshop

800-621-8462

**Hours: 8:30 - 8:00 CST,
Saturdays 10:00 - 4:00**

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Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov.,
Corp., Univ., P.O.s welcome. All new drives, preformatted with latest
stable system software. Factory warranty. Bracket, cables and
software included. 30 Day Money back Guarantee covers drive
products only. Return Authorization number required for returns.
Prices, terms and availability subject to change without notice.

Great Prices. Priceless Support!

SyQuest 5110c—\$699

The New Standard



You know the SyQuest 44 and 88. Together they are the transportable storage standard in the Macintosh market. True interchangeability has been the only problem in an otherwise idyllic trans-

portable storage world. Now SyQuest's 5110c solves the problem. With both read and write compatibility with 44MB and 88MB cartridges*, you no longer have to wonder which SyQuest unit to buy.

Access files on any SyQuest drive

Save files on 44MB or 88MB cartridges, then take them to any compatible SyQuest drive anywhere knowing you'll be able to access them quickly and effortlessly. With the new 5110c drive, that is doubly true.

SyQuest's 5110c allows you to read and write to both 44 and 88MB cartridges (*won't format 44MB cartridges)! There's no longer any worry about whether you'll be completely compatible when you get there.

SyQuest's 5110c removes limitations

Use several cartridges for all of your data; distribute cartridges to many different people or to field offices; or lock cartridges away someplace for safe keeping. Never worry about reading and writing to a cartridge just because you don't have the right drive.

SyQuest 5110c drives from APS

The SQ5110c (44/88MB) is based on proven Winchester head and disk technology with hundreds of thousands of units in the field. The SQ5110c supports average seek times as low as 18ms, which makes editing files direct-to-disk a quick and efficient process.

APS's external enclosure features two outlets, external fusing, push-button SCSI addressing and dual Centronix-style SCSI ports.

SyQuest removable cartridge drives include one cartridge and an external terminator. APS's SyQuest 44 is \$399, the 88 is \$499.

For infinite storage, buy 10 packs

Order SyQuest 44MB cartridges in 10 packs for just \$630 and 88MB cartridges for \$950.

Ask about the GREAT software available when you buy an APS drive! Prices and specifications subject to change without notice.

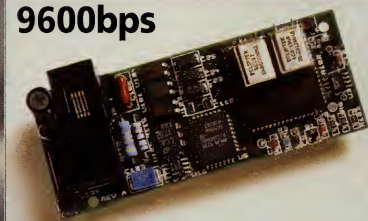
APS Technologies

APSModems: Calling all PowerBooks

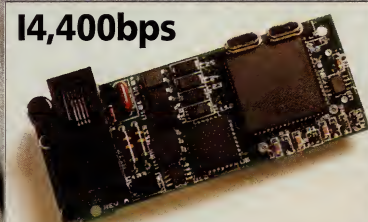


9,600 & 14,400bps
fax/data modems now
\$279 & \$349

9600bps



14,400bps



2400bps
data/fax
modem
\$99*

Pack the power of electronic communication in your PowerBook with an internal APSModem. *For as little as \$99 (regularly \$129) with your purchase of any other APS PowerBook accesso-

ry, outfit your notebook with a 2400 baud Hayes-compatible data modem that sends faxes at up to 9600bps and receives at up to 4800bps. Order one today, fax with it tomorrow.

Have modem, will travel

Your PowerBook will be your most efficient communications tool on the road or anywhere once you install an APSModem. With one of these modems on board, you can send and receive faxes or data from anywhere in the world. You can even use hotel fax machines as a remote printers by sending yourself hard copies of documents you've written while traveling.

For each, the right modem

The APSModem series starts with a 2400-baud model, which sends data at 2400bps or faxes at 9600bps (4800bps receive). *When you buy any APS PowerBook accessory—from a Go•80 drive to a PowerBook Tool Kit—you're eligible to purchase this modem for just \$99!

The APSModem 2400 is regularly \$129. Need more speed and efficiency? Consider the APSModem 9600 or the APSModem 14.4, priced at \$279 and \$349 respectively.

So sophisticated they wake your PowerBook to receive a fax, then lull it back to sleep—each of APS's internal PowerBook modems comes complete with easy-to-use fax software that supports background faxing and a special QuickFax desk accessory.

Guaranteed quality

You get our easy-to-follow installation instructions, a comprehensive operation manual plus APS's legendary service and toll-free technical support. These premium-brand fax modems carry a one-year manufacturer's warranty and APS's 30-day, no-questions-asked money-back guarantee.

24-hour
BBS with
our latest
software

Disk-for-disk
replacement
warranty

30-day
money-back
guarantee

Toll-free
technical
support

Helpful,
knowledgeable
sales
associates

*30-day money-back guarantee • All drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.
• Disk-for-disk replacement warranty • SyQuest, most Quantum, Maxtor and DAT drives are warranted for two years, Maxtor 12, 17 GB and Fujitsu drives are warranted for five years. WREN, Quantum 2.5" drives, TEAC drives, all CD-ROMs, MOs and SyQuest carts are warranted for one year. Toshiba 830 is warranted for three years.
• Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

• All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2 MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.
• Toll-free technical support as often or for as long as you need. Regular hours are 8 am to 8 pm Monday thru Friday, 10 am to 4 pm Saturday, Central Time.

M-F 7AM-9PM CST. SAT 10AM-4PM CST.
Visa/Master Card, Discover, American Express: No Surcharge.
APS Technologies, 2900 S. 29th Hwy., Independence, MO 64057
International: 1-816 478-8300. FAX: 1-816 478-4596 (24 Hours).
Toll Free UK: 0800-897-545. Australia: 0014-800-125-875.

1-800 645-5401

APS
TECHNOLOGIES

Great Prices. Priceless Support!

200 MB-\$449 Maxtor 7213



Been looking for 200MB to fit in your Mac or out, but the price has been too much? Wait no more. The Maxtor 7213 is the drive for you. Quiet, fast and low-power, the Maxtor 7213 fits in

almost every Mac that can accommodate a 3.5" drive. With a seek time of 15ms and transfer rates as high as 1.6MB per second, you can't find a faster 200 MB drive at a lower price. Don't wait, order today!

Fast, Quiet, Low Power

Need 200MB of storage that fit inside your Mac? Haven't been able find a quiet drive that's both blazingly fast and has power demands compatible with even the most power-stingy Macs? Have we got a drive for you!

The Maxtor 7213

Based on Maxtor's proven one-inch technology, the 7213 is very, very fast. With an average seek time of 15ms and a data transfer rate of 1.6MB per second, you get performance exceeding that of most Mac drives – but at an incredible price.

Maxtor's 7213 not only provides you with over 200MBs of storage, but its compact 3.5-inch form-factor allows it to fit internally in the Mac LC, LCII, si, Classic and Classic II. Of course, it fits in the Mac IIs, SEs and Quadras, too.

The 7213 is extremely quiet – only 35dBA in idle (spinning) on-track mode with an operating vibration of only 1G.

The 7213 requires very little power—only 3.7 watts needed to read or write. That's much less than many other "low-power" drives.

All in all, the Maxtor 7213 is the perfect fit for the Mac that needs a lot more hard disk space inside, or outside with APS' external zero footprint enclosure

The Maxtor 7213 from APS

Maxtor's 7213 has a two-year warranty. Best of all, it comes with APS's legendary service and toll-free technical support.

When you think 200MBs, think of the Maxtor 7213. It's in stock now.

Ask about the GREAT software available when you buy an APS drive! Prices and specifications subject to change without notice.

APS Technologies

APS Compression DAT, \$1599 blows away the competition



The *Macworld* Editors' Choice for high-capacity back up, APS's Compression DAT stores up to 5GB per 90m tape cartridge. Need fast, high-capacity back-up? This \$1599 DAT offers one of the

best archiving solutions on the market. Internal models for Quadra 900 and 950 are just \$1499. Only need to squeeze 1.2 to 2GB onto a cartridge? Take a look at APS's non-compression DAT, now just \$1299.

High-quality, high-density storage

This Archive Python-based SCSI digital audio tape drive which combines high capacity with exceptional performance is available in external configurations as well as internal options for Mac Quadra 900 and 950 models.

Quick access, dependable performance

Consistently rated tops by the leading computer magazines, APS's Compression DAT backs up at a rate as high as 14MB per minute, with non-compression units clocking in at up to 10MB per minute.

APS DATs carry a two-year manufacturer's warranty and APS's drive-for-drive replacement guarantee. These DATs also come bundled with Retrospect, the standard in tape back up software from Dantz Development (we include Sytos Plus with PC versions).

Easy-to-follow installation instructions for internal models, all necessary cables and one 60m tape cartridge are also included with each DAT.

Tech support six days a week

You also get the peace of mind of knowing that APS's knowledgeable technical support staff is ready and available to answer your questions—toll-free—six days a week.

Load up on media

If your emergency back up scheme requires that multiple tapes be stored off-site, make sure you start out with plenty of cartridges. Maxell DAT tapes are available in 60m and 90m 10-packs for \$110 and \$130, respectively.

Call APS today; add an APS DAT to your desktop or network tomorrow.

24-hour
BBS with
our latest
software

Disk-for-disk
replacement
warranty

30-day
money-back
guarantee

Toll-free
technical
support

Helpful,
knowledgeable
sales
associates

1-800 645-5401

APS
TECHNOLOGIES

Great Prices. Priceless Support!

Blistering speed Micropolis I.I.G, \$1999



**External
Micropolis
\$2069**

If you've been waiting for real mass storage in a 3.5-inch package, your wait is over. The new Micropolis I.I.GB has a spindle speed of 5400 rpm, allowing an impressive 9.4ms average seek and sus-

tained transfer rates approaching 4MB per second! Add Micropolis' 5-year warranty to APS's legendary service and support and you have the best high performance storage solution available in a 3.5-inch format.

Quantum

MB	INTL	EXTL
120	\$399	\$479
240	589	659
425	929	999
525*	1149	1219
1225*	1899	1969

*Quantum 525 and 1225 drives coming soon!

ELS Drives

42	\$199	\$279
85	259	329
127	329	399
170	369	429

Fujitsu

MB	INTL	EXTL
520	\$1049	\$1149
1.2G	1599	1699
2.0G	2595	2695

Includes Fujitsu's 5-year warranty

Ask about our \$69 extended-life PowerBook Battery

Go•Drives

80	\$349	\$499†
120	469	599†

†Battery-powered portable case for the PowerBook

Toshiba

830	\$1099	\$1169
1.2.G	1599	1669

Great idea! Never get caught with the wrong cable for your PowerBook! \$23

Ask about APS software specials

Maxtor

MB	INTL	EXTL
120	\$299	\$379
213	449	519
340	699	769
535	999	1079
1.2G**	1649	1749
1.7G**	1899	1999

**Includes new 5-year warranty

Micropolis

1.1G	\$1999	\$2069
2.0G	2899	2999

APS Technologies

State-of-the-optical Epson's MO Drive



**External
Epson MO**
\$1199

Transport, store and access multi-megabyte documents on low-cost, high-density MO cartridges with Epson's Magneto Optical Drive system. As an alternative to tape back up or other removable

cartridge archive systems, Epson's MO stores 128MB on durable \$48 diskettes. Carry them in your pocket, drop them in the mail to your output service—these cartridges can take a beating.

DAT

MB	INTL*	EXTL
APS _{DAT}	\$1499	\$1599

2.6–5 GB Compression DAT

APS _{DAT}	1199	1299

Desktop and portable units
Archive-based mechanisms

*Quadra 900 and 950

Digital Audio Tapes

Maxell 60m	\$12
Maxell 90m.....	16

Epson

Model	INTL	EXTL
MO*	\$1099	\$1199

*Magneto optical drive

TEAC

155 MB Tape Back Up	\$499
600 MB Tape Back Up	799

All tape drives include Retrospect by Dantz Development

SyQuest

Model	EXTL
SQ555	\$399

SQ5110	499
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SQ5110c	699
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Dual 44	799
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Dual 88	959
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SyQuest Cartridges

44/88MB	\$65/105
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SOLA

UPS	
450 watt	\$220

600 watt	330
----------	-----

900 watt	490
----------	-----

Ask about SOLA's
spectacular trial offer

Toshiba

CD-ROM	\$569
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3301B includes five-disc APS CD library

*30-day money-back guarantee • All drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.
• Disk-for-disk replacement warranty • SyQuest, most Quantum, Maxtor and DAT drives are warranted for two years. WREN, Quantum 2.5" drives, TEAC drives, all CD-ROMs, MOs and SyQuest carts are warranted for one year. Toshiba 830 is warranted for three years.
• Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

*All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2 MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.
• Toll-free technical support as often or for as long as you need. Regular hours are 8 am to 8 pm Monday thru Friday, 10 am to 4 pm Saturday, Central Time.

M-F 7AM-9PM CST. SAT 10AM-4PM CST.
Visa/Master Card, Discover, American Express: No Surcharge.

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International: 1-816 478-8300. FAX: 1-816 478-4596 (24 Hours).
Toll Free UK: 0800-897-545. Australia: 0014-800-125-875.

1-800 645-5401

24-hour
BBS with
our latest
software

Disk-for-disk
replacement
warranty

30-day
money-back
guarantee

Toll-free
technical
support

Helpful,
knowledgeable
sales
associates

APS
TECHNOLOGIES

Quantum



Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
Go-Drive (2.5" Hard Drives designed for Notebooks)					
80mb	GO80	17ms	80mb	\$325	\$425
120mb	GO120	17ms	120mb	\$455	\$555
ELS Series (3.5" Low Profile and Low Power)					
42mb	ELS42	19ms	40mb	\$185	\$245
85mb	ELS85	17ms	82mb	\$239	\$299
127mb	ELS127	17ms	124mb	\$309	\$369
170mb	ELS170	17ms	160mb	\$345	\$405
LPS Series (3.5" Low Profile)					
240mb	LPS240	10ms	234mb	\$519	\$579
NEW 525mb	LPS525	10ms	500mb	\$1049	\$1109
ProDrive Series (3.5" Half Height)					
425mb	PRO425	9ms	406mb	\$899	\$959
NEW 700mb	PRO700	10ms	670mb	\$1249	\$1309
NEW 1.0GIG	PRO1050	10ms	1001mb	\$1529	\$1689
NEW 1.2GIG	PRO1225	10ms	1165mb	\$1699	\$1759

ELS, LPS, and ProDrive Series carry a TWO Year Warranty. Go-Drives carry a ONE Year Warranty.

Seagate

Featuring...
NEW Elite Series



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
3.5" Disk Drives						
248mb	ST3283N	Low Profile	12ms	235mb	\$599	\$659
1.2GIG	ST11200N	Half Height	10.5ms	1000mb	\$1769	\$1829
Wren and Elite Series (5.25" Full Height)						
645mb	ST4767N	W-Runner II	11.9ms	634mb	\$1519	\$1619
1.2GIG	ST41200N	Wren-7	15ms	989mb	\$1579	\$1679
1.6GIG	ST41651N	Wren-8	15ms	1350mb	\$1909	\$2009
2.1GIG	ST42100N	Wren-9	12.9ms	1900mb	\$2129	\$2229
1.6GIG	ST41600N	Elite-1	11.5ms	1307mb	\$2069	\$2169
2.4GIG	ST42400N	Elite-2	11ms	2050mb	\$2949	\$3049
3.4GIG	ST43400N	Elite-3	11ms	2750mb	\$4129	\$4229

Seagate drives carry a ONE Year Warranty.

CONNER

Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
85mb	CP30080E	3.5" Low Profile	17ms	82mb	\$239	\$299
120mb	CP30100	3.5" Low Profile	19ms	116mb	\$289	\$349
170mb	CP30170E	3.5" Low Profile	9ms	160mb	\$329	\$389
212mb	CP30200	3.5" Low Profile	9ms	206mb	\$459	\$519
540mb	CP3540	3.5" Half Height	8.5ms	515mb	\$995	\$1055

Conner drives carry a ONE Year Warranty.

Maxtor



Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
XT Series (3.5" Low Profile)					
120mb	7120S	15ms	121mb	\$299	\$359
207mb	7213S	15ms	202mb	\$439	\$499
LXT Series (3.5" Half Height)					
330mb	LXT-340	15ms	324mb	\$639	\$699
535mb	LXT-535	12ms	510mb	\$989	\$1049
XT-8000 and Panther Series (5.25" Full Height)					
645mb	XT-8760S	16.5ms	639mb	\$1179	\$1279
1.2GIG	PO-12S	13ms	997mb	\$1485	\$1585
1.7GIG	P1-17S	13ms	1433mb	\$1749	\$1849

Maxtor 3.5" drives carry a ONE Year Warranty. Maxtor 5.25" drives carry a TWO Year Warranty.

FUJITSU



FIVE YEAR WARRANTY

Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
425mb	M2623FA	3.5" Half Height	9ms	405mb	\$965	\$1025
520mb	M2624FA	3.5" Half Height	9ms	496mb	\$1025	\$1085
1.2GIG	M2266	5.25" Full Height	14.5ms	1029mb	\$1579	\$1679
2.0GIG	M2652	5.25" Full Height	14.5ms	1665mb	\$2679	\$2779

HEWLETT PACKARD

FIVE YEAR WARRANTY



Unformatted Capacity	Model	Access Time	Actual Mac Capacity	Internal	External
3.5" Half Height Drives					
234mb	C2233	12.6ms	223mb	\$799	\$859
422mb	C2235	12.6ms	402mb	\$1049	\$1109
1.2GIG	C2247	10.5ms	1000mb	\$2069	\$2129
5.25" Full Height Drives					
677mb	97556	13.5ms	633mb	\$1465	\$1565
1.2GIG	97558	13.5ms	1020mb	\$1819	\$1819
1.6GIG	97560	13.5ms	1292mb	\$2149	\$2249
2.4GIG	CP3010	11.5ms	2000mb	\$3129	\$3229

New 88mb SyQuest Drive

NEW 88MB SyQuest
READS and WRITES
44mb & 88mb
cartridges!



If you have been waiting for 88mb Syquest drives to get more popular, wait no longer.

Introducing ClubMac's Newest Syquest Sub-System, The ClubMac 88c. Based on the new Syquest 5110c mechanism, the ClubMac 88c will allow you to read and write both 44mb and 88mb cartridges. Finally there's one simple solution. Buy the drive that will offer complete compatibility with all Syquest based cartridges. Buy the ClubMac 88c.

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NEW

ClubMac 44mb (SQ-555)	\$389	ClubMac 88mb (SQ-5110)	\$489	ClubMac 88c (SQ-5110-C)	\$619
ClubMac 44mb Internal	\$369	ClubMac 88mb Internal	\$469	ClubMac 88c Internal	\$599
ClubMac 44mb Dual	\$729	ClubMac 88mb Dual	\$899	ClubMac 88c Dual	\$1149
44mb Cartridge	QTY 1:\$64	88mb Cartridge	QTY 1:\$99	Note: The ClubMac 88c will read and write 44mb cartridges but will not format them.	
	QTY 10		QTY 10:\$96		

ClubMac Syquest Drives have a TWO YEAR Warranty, and include one cartridge, cables, and SCSI Director™ formatting software. Syquest cartridges have a ONE YEAR Warranty.

ClubMac Optical Drives

Hyper Space



Model		Capacity	Description	Seek	External
CMO-	Teac	128mb	3.5" Half Height	45ms	\$1049
CMO-LF3004	Panasonic	128mb	3.5" Half Height	45ms	\$1129
CMO-3100E	Ricoh	128mb	3.5" Half Height	45ms	\$1089
CMO-5031E	Ricoh	594/652mb	5.25" Full Height	28ms	\$2399

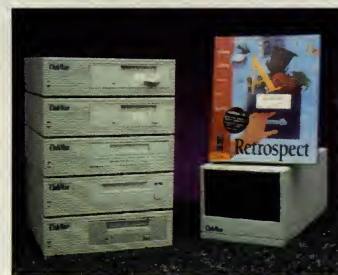
128mb Cartridge	3.5" Single Sided	\$39
594/652mb Cartridge	5.25"-512/1024 bytes/sec	\$99

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.

GREAT Media PRICES

60 meter DAT	\$13
90 meter DAT	\$16
CT600N	\$19
CT600F	\$28
Exabyte 8mm	\$18

ClubMac TAPE BACKUP Systems



Capacity	Model	Description	Media	Internal	External
155mb	Teac MT2ST/N50	Analog	CT600N	\$469	\$489
600mb	Teac MT2ST/F50	Analog	CT600F	\$679	\$699
2.0GIG	ARdat	DAT, DDS	4mm	\$1219	\$1239
2.0GIG	WangDAT 1300XL	DAT, DDS	4mm	\$1249	\$1269
3-5GIG	WangDAT 3200	DAT, DDS-DC	4mm		\$1489
2.0GIG	HP 35470A	DAT, DDS	4mm	\$1329	\$1349
3-5GIG	HP 35480A	DAT, DDS-DC	4mm	\$1529	\$1549
2.2GIG	Exabyte EXB-8200	Digital/Helical	8mm		\$1859
5.0GIG	Exabyte EXB-8500	Digital/Helical	8mm		\$2849

Tape Backup Systems include RetroSpect v.1.3c Backup Software, ONE cartridge and ONE Year Warranty.



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- 650/1.0GIG Capacity
- 5.25" Full Height Optical Drive
- 35 ms Average Seek
- Includes ONE ZCAV Cartridge

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33 MHz PowerCache	\$539 *	\$659 *
40 MHz PowerCache	\$749 *	\$909 *
50 MHz PowerCache	\$1079 *	\$1319 *
Equalizer LC	\$169	\$239
PowerCache Adapter	\$40	
* Cache Adapter not included		

Cache Cards

FastCache IIsi	\$279
FastCache IIsi with 68882	\$349
FastCache IIfi	\$215
FastCache 040 (128K - Q700/900)	\$259
FastCache 040 (128K - Q700/900/950)	\$399
Expansion Boards	
DualPort IIsi	\$165
PowerMath LC	\$115
33MHz Turbo 040	\$1715



Macintosh Memory...

Quadra 950

16mb Module	\$540
256 VRAM	\$Call
Video (Q700/900)	
256K VRAM	\$Call

Macintosh Memory

1mb X 8 - 80ns	\$32
2mb x 8 - 80ns	\$64
4mb X 8 - 80ns	\$124
16mb X 8 - 80ns	\$540
Mac IIfx	
1mb X 8 - 80ns	\$33
4mb X 8 - 80ns	\$130
16mb X 8 - 80ns	\$Call

PowerBook 140/170

4MB Memory Module	\$234
6MB Memory Module	\$324
PowerBook 160/180	
8MB Memory Module	\$387
10MB Memory Module	\$469
Duo 210/230	
4MB Memory Module	\$387
8MB Memory Module	\$634

Modems...

5 YEAR Warranty



SupraFAXmodem \$349

14.4 S/R fax, 14.4 data modem v.32bis, v.42bis, MNP 5 w/FaxSTF & Microphone Software

US Robotics

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Sportster 2400 Mac & Fax	\$189
Worldport Pocket 14.4 for Mac	\$415
Courier HST Dual Standard	\$Call



PowerModem I (24/96/48 S/R fax modem)	\$135
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PowerModem IV (14.4/14.4 S/R fax modem)	\$419

Global Village

POWERPORT

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Silver (96/96 S/R fax modem)	\$365
Gold (14,400 S/R fax modem)	\$429
TELEPORT	
Bronze (24/96 S/R fax modem)	\$199
Silver (96/96 S/R fax modem)	\$349
Gold (14,400 S/R fax modem)	\$435

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Thick/Thin/10BaseT, 64K	\$199
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Thick/10BaseT, 64K	\$149

Mac IIsi & SE/30 (030 PDS)

Thick/Thin/10BaseT, 64K, FPU socket	\$199
Thick/Thin/10BaseT, 64K, FPU chip	\$289
Thick/Thin, 64K, FPU socket	\$149
Thick/Thin, 64K, FPU chip	\$245
Thick/10BaseT, 64K, FPU socket	\$149
Thick/10BaseT, 64K, FPU chip	\$245

Mac LC & LCII (020 & 030 PDS)

Thin/10BaseT, FPU Socket	\$199
Thin/10BaseT, FPU Chip	\$289
Thin, FPU Socket	\$149
Thin, FPU Chip	\$245
10BaseT, FPU Socket	\$149
10BaseT, FPU Chip	\$245

Mac SE (68000 PDS)

Thick/Thin/10BaseT, 32K	\$199
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Thick/10BaseT, 32K	\$149

SCSI Products

Thick/Thin/10BaseT, Includes SCSI cable	\$299
Powerbook, Thick/Thin/10BaseT	\$329
10BaseT, Includes SCSI Cable	\$239
PowerBook, 10BaseT	\$269

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Thin FriendlyNet Media Adapter	\$79
Thick FriendlyNet Media Adapter	\$79
10BaseT FriendlyNet Media Adapter	\$79

10BaseT Hubs

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SNMP Card Agent for Mac (12-Pack)	\$120
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- 1200 X 1200 dpi via hardware interpolation
- 42% faster than the ES-300C color scanner

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PrecisionColor Pivot	\$949
PrecisionColor Display/19	\$2089
PrecisionColor Display/20	\$2319
PrecisionColor Display/20S	\$2349
Radius Mono/Gray Scale Displays	
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Mono Pivot Display /E*	\$699
Two Page Display/19	\$899
Two Page Display/21	\$1149
Two Page Display/21E *	\$1299

* Low Emissions

Radius Interfaces

Color Pivot	\$505
PowerView	\$499
PrecisionColor 8XJ	\$489
PrecisionColor 24X	\$1629
PrecisionColor 24XX	\$819
PrecisionColor 24XP	\$489
Two Page Display	\$395
Mono Pivot	\$249
Full Page Display	\$189

Accelerators / Multimedia

Radius Rocket 25i	\$1199
Radius Rocket 33	\$1999
RocketShare	\$419
SCSI-2 Booster	\$249
VideoVision	\$1949

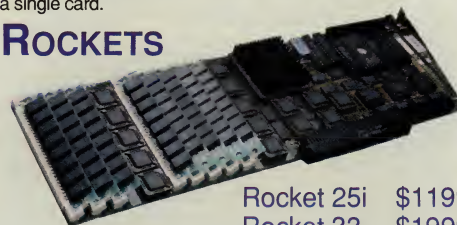


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Radius Rockets can increase the processing speed of the Mac II up to 8 times, allowing the Mac II to exceed Quadra performance



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RasterOps 24XLI	\$1939
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PaintBoard Li	\$829
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SuperMatch 20 Color Display	\$1479
SuperMatch 17•T Trinitron Color	\$1089
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Spigot & Sound NuBus / Pro	\$479/1149
VideoSpigot Pro (NuBus / IIsi)	\$1079/1229

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Spectrum/24 Series III	\$819
Spectrum/24	\$739
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MultiSync FG Color Display Solutions for Macintosh Computers

15" MultiSync 3FGx
Resolution up to 1024 x 768



The 15", 17", 21" NEC MultiSync FG Display Solutions for the MAC II family and the powerful Quadra series. Multisync FG monitors combine features that compliments the Macintosh computer and advance screen performance for brighter, sharper, more accurate images. The Mac FG Color Interface card, engineered in conjunction with Radius, give you flexible display capabilities seamlessly integrated with each of the MultiSync FG monitors. Together, the monitors and display interface cards create a total display solution that will meet virtually any application need. The NEC MultiSync FG Color Displays offer

- Larger, more accurate images
- AccuColor Control for NEC 4FG, 5FG, 6FG
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- Multiple-frequency
- 0.28mm trio dot pitch
- TWO Year Warranty

MultiSync 3FGX (15" Color)	\$629
MultiSync 4FG (15" with AccuColor System)	\$759
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NEC

21" MultiSync 6FG **\$2399**



- Perfect for professional color desktop publishing, large screen business applications, multimedia, paint program, 24-bit imaging
- 21" diagonal flat square screen
- 0.28 mm trio dot pitch
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NEC

Silentwriter Printers



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- Adobe PostScript Level 2
- HP LaserJet III Emulation
- Auto Interface Monitor Switching
- Built-in Envelope Feeder
- 6 ppm • 35 fonts • 2 MB RAM
- Parallel, Serial, AppleTalk
- 250-sheet Paper Capacity

Model 97 **\$1749**

- Adobe PostScript Level 2
- HP LaserJet III Emulation
- Auto Interface Monitor Switching
- Built-in Envelope Feeder
- 10 ppm • 35 fonts • 2 MB RAM
- Parallel, Serial, AppleTalk
- 250-sheet Paper Capacity

NEW Built-In POSTSCRIPT FAX

Model 95fx **\$1859**

- The Model 95fx combines the award winning Model 95 printer with a built-in plain paper fax
- User can fax from any MAC or DOS/Windows PC using the software included with the printer
- The Model 95fx can send and receive faxes to/from any standard fax machine or other Model 95fx

Model 97fx **\$2199**

OPTIONS for the NEC Silentwriter Printers

- 250-sheet Universal Cassette for Model 95/95fx
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- 250-sheet Legal Cassette
- 2MB Memory Upgrade
- Face-Up Tray
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- All items manufactured by ClubMac are returned to ClubMac for warranty repair.
- All other items carry manufacturer's warranty.

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- All products manufactured by ClubMac carry a 30 day money back guarantee.
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RasterOps 21" Color	2,799	Hitachi								
B. RealTech 21" Mono/Grayscale	795	—								
C. SuperMac (SuperMatch) 21"	2,529	Hitachi								
SuperMac 21" Mono/Grayscale	989	—								
D. RasterOps 20" Trinitron Multi-Mode	\$2,329	Trinitron								
Radius Precision Color 20"	2,389	Trinitron								
RasterOps 20" Hitachi Color	1,469	Hitachi								
E. RealTech 20" Trinitron Multi-Mode	1,895	Trinitron								
F. SuperMac 20" (SuperMatch)	1,499	Hitachi								
SuperMac 20" (SuperMatch Dual-Mode)	2,499	Trinitron								
G. NEC 17" 5FG Color	\$1,589	Toshiba								
RasterOps 16" (RasterOps Sweet 16)	1,249	Panasonic								
H. RealTech 17" (RealTech Multi-Mode)	995	Hitachi								
I. Sony 17"	1,189	Trinitron								
J. Seiko 17" (1760)	1,149	Trinitron								
K. Radius Precision Color Pivot (15")	\$959	Non-Trinitron								
L. RealTech 15" Grayscale	449	—								
M. Seiko 14" Color 1445	479	Trinitron								
N. Sony 13" Color	689	Trinitron								

Monitors



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These PowerBook 160s and PowerBook 180s each include: 8 Mb of RAM, expandable to 14 Mb; display with 16 grayscale levels; 1.4 Mb floppy disk drive.

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The PowerBook Duo 210 8/80 and PowerBook Duo 230 8/80 transform into a desktop computer by using the optional Duo Dock. Each PowerBook Duo 210 or 230 includes:

- 640 x 400 Supertwist liquid crystal display with 16 grayscale levels
- 8 Mb of RAM, expandable to 24 Mb
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- Optional internal modem

PowerBook® Duo 210 8/80	PowerBook® Duo 230 8/80
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Lease: \$69/month	Lease: \$79/month

25 MHz 68030 microprocessor. 80 Mb hard drive.
All PowerBooks listed here are equipped with a 19mm trackball.

33 MHz 68030 microprocessor. FPU, 80 Mb hard drive.
PowerBook Duo 230 with 8/120.....\$3249

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MassMicro FM 24/96 PB.....189
Zoom Pocket Modem.....119

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TransWarp LC (50 MHz w/50-FPU).....1319
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QuickSilver.....189
1.44 SuperPlus Drive.....279
QuadraLink.....199

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PowerCache Accelerators	
33 MHz Accelerator.....\$529	
40 MHz Accelerator.....739	
50 MHz Accelerator.....1065	
ComboCache Card for IIsi.....209	
PowerMath Card for LC.....109	
Equalizer Card for LC.....159	
FastCache for Quadra 700/900/950.....389	
PowerCache Adapter.....40	

FUSION DATA

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TokaMac IIsi.....1259
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DaynaPORT E/Z\$269

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Divides your network into multiple zones.

Dayna EtherPrint.....\$335

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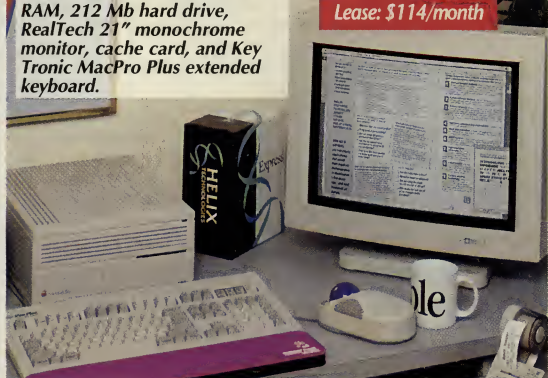
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Macintosh IIfx with 5 Mb of RAM, 212 Mb hard drive, RealTech 21" monochrome monitor, cache card, and Key Tronic MacPro Plus extended keyboard.

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Lease: \$114/month



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Mac IIsi Solution with Seiko 14" Color Monitor



Macintosh IIsi with 5 Mb of RAM, 120 Mb hard drive, Seiko 14" Trinitron monitor, and Key Tronic MacPro Plus extended keyboard.

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Quadra 700/Trinitron Intermediate Graphics Solution

Quadra 700, 8 Mb of RAM, 520 Mb hard drive, RealTech 20" Trinitron monitor w/PaintBoard Li and Key Tronic MacPro Plus extended keyboard.

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Flatbed desktop scanners for 24-bit color, 8-bit grayscale, and black/white images. Ideal for mid-range output or position prints for mockups/presentations.

	Price	DPI	Brightness & contrast levels	Scanning area	Flat art	Transparencies	Slides	Software
MICROTEK								
Scanmaker II Includes ScanMatch color calibration software	\$909	600	14	8.5 x 11	■			Includes limited version of Adobe Photoshop
Scanmaker IIXE Includes ScanMatch color calibration software	1,179	600	14	8.5 x 11	■			Includes full version of Adobe Photoshop
Scanmaker 1850 Slide Scanner	1,569	1850	14	2.5 square inches		■		Includes full version of Adobe Photoshop
REALTECH								
Scan 800 Optional Adobe Photoshop	\$1,199 200	800	200	8.5 x 11.75	■			Includes Scan-Match color calibration software
Scan 800 with Transparency Option	1,695	800	200	8.5 x 11.75	■	■	■	
UMAX								
UC 630	\$1,179	600	51	8.5 x 14	■			Includes full version of Adobe Photoshop
UC 840	1,289	800	51	8.5 x 14	■	■		Includes full version of Adobe Photoshop
Transparency Option	729	(800)	(51)	8 x 14	■	■	■	
UC 1200S	3,179	1200	51	8 x 11.8	■	■	■	Includes full version of Adobe Photoshop
Transparency Option	729	(1200)	(51)		■	■	■	



The photo above is a 300 dpi image of an 8 x 10 transparency. It was scanned on the RealTech Scan 800 with Transparency Option, then adjusted with ScanMatch and color-corrected with Adobe Photoshop.

Scanners & Printers

Laser printers

The right printer can do wonders for your productivity. Do you need speed? Adobe PostScript Level 2? Do you need to print a lot of pages each month?

	Dpi	Engine speed	RAM	Interpreter	Microprocessor	Duty cycle	Paper trays	SCSI port	Interfaces	Resident fonts	Misc.
NEC Silentwriter Model 95	■ 300 dpi	■ 6 pages/min.	■ 2 Mb RAM (expandable to 5 Mb)	■ Adobe PostScript Level 2	■ Motorola 68000 processor	■ 6,000 pages per month	■ Built-in envelope feeder & 250-sheet tray; optional 2nd tray available in letter or legal sizes	■ No SCSI port	■ Appletalk RS-422, parallel, and RS-232C	■ 35 Micro-fine toner and NEC's patented "Sharp Edge" technology create sharp black print quality	QMS We offer dozens of printers, including the QMS line...too many to show in this ad! If you don't see what you want listed here, please call us.
\$1,469 Lease: \$40/month											
NewGen 400P	■ 400 dpi	■ 4 pages/min.	■ 4 Mb RAM (expandable to 16 Mb)	■ PostScript compatible	■ Weitek XL-8220 processor	■ 3,500 pages per month	■ Optional 2nd paper drawer	■ Optional SCSI port	■ Appletalk RS-422, parallel, RS-232C	■ 35	
\$1,879 Lease: \$51/month											
RealTech Laser	■ 300 dpi	■ 9 pages/min.	■ 2 Mb RAM (expandable to 10 Mb)	■ Adobe PostScript Level 2	■ Weitek RISC processor	■ 5,000 pages per month	■ Optional 2nd paper tray & cassette feeder are available for \$250 (for both)	■ SCSI port	■ Appletalk RS-422, parallel, and RS-232C.	■ 35 ATM font rendering technology builds raw type characters 4 to 5 times faster, enabling the RealTech Laser to print complex documents faster than other printers in its price range.	WINNER MacWeek 1991 TARGET AWARD
\$1,595 Lease: \$44/month											
Texas Instruments MicroLaser XL Turbo	■ 300 dpi	■ 16 pages/min.	■ 2.5 Mb RAM (expandable to 10.5 Mb)	■ Adobe PostScript Level 2	■ Weitek RISC processor	■ 25,000 pages per month	■ Optional 2nd paper drawer	■ Optional SCSI port	■ Appletalk RS-422, parallel, and RS-232C	■ 35	
\$2,795 Lease: \$77/month											
Texas Instruments MicroLaser Plus	■ 300 dpi	■ 9 pages/min.	■ 1.5 Mb RAM (expandable to 4.5 Mb)	■ Adobe PostScript Level 1	■ Motorola 68000 processor	■ 10,000 pages per month	■ Optional 2nd paper drawer and envelope feeder	■ Optional SCSI port	■ Appletalk RS-422, parallel, and RS-232C	■ 17 Available with 35 resident fonts (\$1349)	
\$1,249 Lease: \$34/month											
The only 11x17 printer with Adobe PostScript Level 2 for less than \$3500.	■ Choice of 300 or 400 dpi	■ 15 ppm (letter size); 8 ppm (tabloid size)	■ 4 Mb RAM (expandable to 16 Mb)	■ Adobe PostScript Level 2	■ Weitek RISC processor (and ATM font rendering technology)	■ 20,000 pages per month	■ Two paper trays included (one tray for letter size; one tray for tabloid size.)	■ SCSI port	■ 35 Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.		Jeanne is thrilled that she can print proofs of her company newsletter on tabloid-size paper. No more tiling!
RealTech Laser 400											
\$3,195 Lease: \$88/mo.											
QMS 860 Hammerhead	■ 600 dpi	■ 8 ppm (letter size); 4.6 ppm (tabloid size)	■ 12 Mb RAM (expandable to 32)	■ Adobe PostScript compatible	■ Intel 80960CA RISC processor	■ 10,000 pages per month	■ Optional 2nd paper cassette	■ SCSI port	■ 39 fonts		
\$4,279 Lease: \$117/mo.											



RealTech Laser 400

\$3,195
Lease: \$88/mo.

"...be forewarned: PostScript-clone printers still have a long way to go before they can rival true Adobe PostScript printers."

Quote from MacUser September 1992 issue, "Personal PostScript Printers" by Bruce Fraser.

★★★★★
MACWORLD MAGAZINE
September 1992



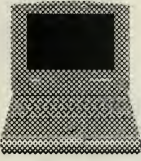







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SyQuest 88mb C** (*One Cartridge Included)	\$625
*Extra 44mb cartridges (with purchase of drive kit)	\$62
*Extra 88mb cartridges (with purchase of drive kit)	\$97
SyQuest 44mb Cartridge/10 Pack	\$63/\$620
SyQuest 88mb Cartridge/5 Pack	\$98/\$480

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Pro	425mb	13ms	3.5"HH	\$899	\$959
ELS	170mb	17ms	3.5"TH	\$349	\$409
ELS	127mb	17ms	3.5"TH	\$319	\$379
ELS	85mb	19ms	3.5"TH	\$259	\$319
ELS	42mb	21ms	3.5"TH	\$189	\$249
LPS	105mb	15ms	3.5"TH	\$299	\$359
LPS	120mb	10ms	3.5"TH	\$349	\$409
LPS	245mb	16ms	3.5"TH	\$529	\$589
GO•	120mb	16ms	2.5"PB	\$459	\$559
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Quantum carries a TWO year Warranty.

Maxtor®

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1.027gb	13ms	5.25"FH	\$1449	\$1549	
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340mb	13ms	3.5"HH	\$659	\$719	
213mb	15ms	3.5"TH	\$469	\$529	
130mb	15ms	3.5"TH	\$289	\$349	

Maxtor carries a ONE year Warranty on 3.5" Drives and
TWO Years on 5.25" Drives

FUJITSU

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1.0gb	15ms	5.25"FH		\$1499	\$1599
520mb	9ms	3.5"HH		\$999	\$1069
425mb	9ms	3.5"HH		\$899	\$959

Fujitsu carries a FIVE year Warranty.

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128mb	35ms	3.5"HH	\$1099	\$1199

RICOH

Model	Speed	Size	Internal	External
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128mb	45ms	3.5"HH	\$1199	\$1249

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Model	External
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*All Floptical drives come with FWD HDT software,
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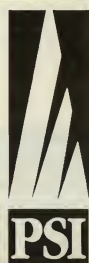
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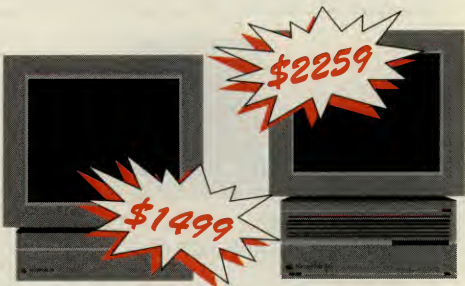
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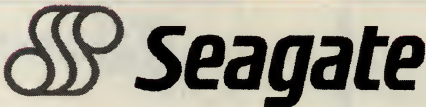


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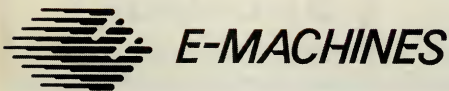
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<input type="checkbox"/> 676MB WREN	1549	1649
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Macintosh Quadra 700 4/0 Macintosh Quadra 950 4/0



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<input type="checkbox"/> DayStar FastCache IIci	\$269
<input type="checkbox"/> DayStar FastCache IIsi	289
<input type="checkbox"/> 33MHz PowerCache LC	689
<input type="checkbox"/> 40MHz PowerCache	949
<input type="checkbox"/> 50MHz PowerCache	1379
<input type="checkbox"/> PowerCache Adapter	42

Prices for the PowerCache include a math coprocessor. Available for the LC, SE/30, II, IIX, IICx, IIci, and IIsi.

CLARIS®

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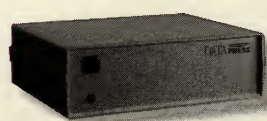


<input type="checkbox"/> ETC DataCAM B&W	\$279
<i>ETC DataCAM B&W video camera includes the camera with light amplifying infrared LED's to capture images even under the most adverse lighting conditions, built-in microphone, speaker, tripod, battery, video and audio cables (RCA phono type connector). Options include: AC adapter (90-230 VAC); RF transmitter and receiver (range up to 75'). Requires a video-digitizing card.</i>	
<input type="checkbox"/> ETC DataCAM Color	\$549
<i>ETC DataCAM Color video camera includes the camera with built in microphone, speaker, tripod, battery, video and audio cables (RCA phono type connector). Options include: AC adapter (90-230 VAC); RF transmitter and receiver (range up to 75'). Requires a video-digitizing card.</i>	

Networking Products

<input type="checkbox"/> ETC LAN Adaptor (10BaseT)	\$199
<input type="checkbox"/> ETC Magic Converter II	149
<input type="checkbox"/> ETC Ethernet Thin Repeater	339
<input type="checkbox"/> ETC 10BaseT 12-Port Hub	529
<input type="checkbox"/> ETC DataFlow II Card	140
<i>Ask about the entire DataFlow line!</i>	

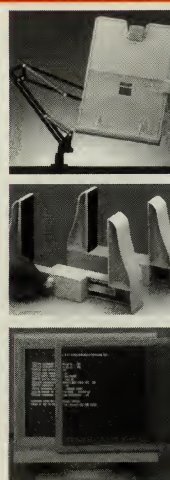
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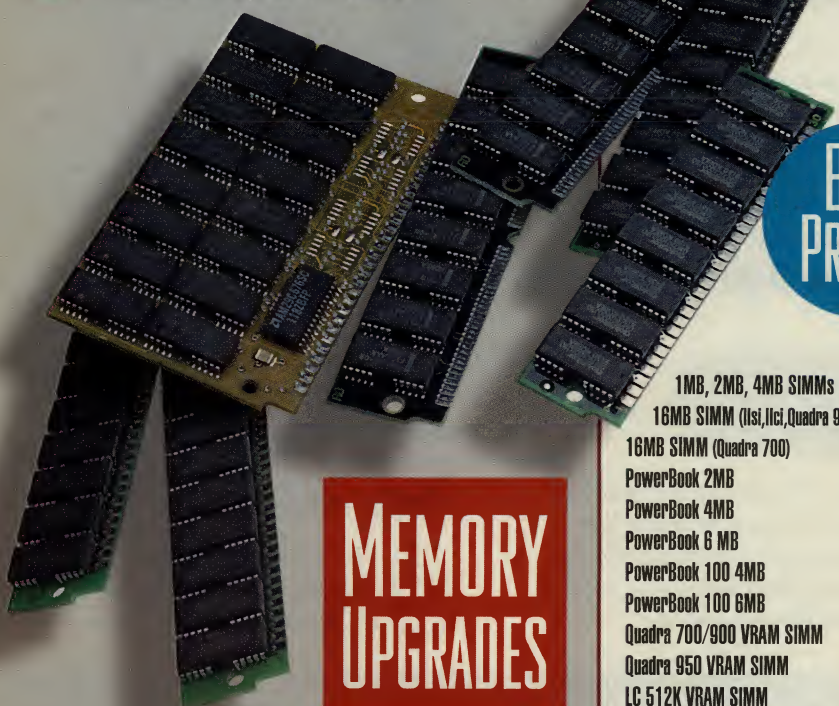
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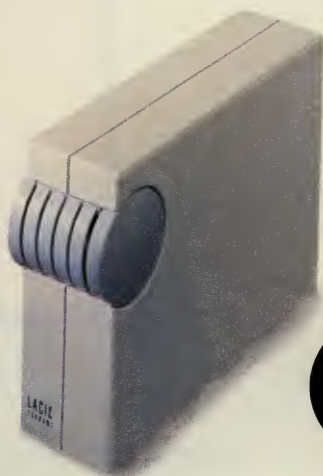
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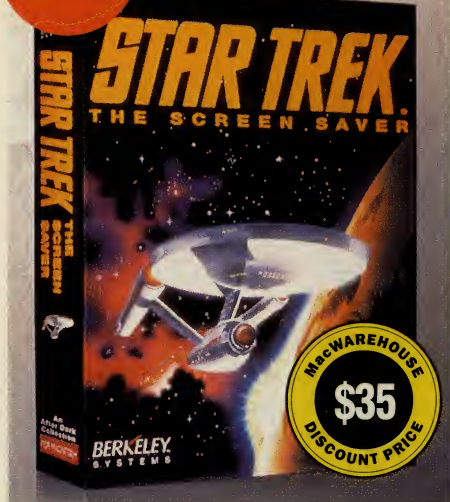
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(Power Up! Software) PowerRunner combines Power Up's popular Calendar Creator™ and Address Book Plus™ software with the best-selling Day Runner® personal organizer. Calendar Creator handles everything from appointments to repeating meetings and holidays. Print your calendars in any format, from daily to yearly, then insert in your Day Runner binder. Address Book Plus produces top-quality address book pages, mailing labels, rotary file cards, envelopes, and unique InstaBooks™. Print double-sided address pages to fit Day Runner and other popular organizers. Day Runner's 3-ring binder houses 51/2" x 81/2" pages and includes a 45-page refill pack. **BUS0268 FaxFACTS 1623 Also available: Calendar Creator BUS0073 \$44 and Address Book Plus BUS0096 \$52.**



PowerMerge

(Leader Technologies) File Synchronization. If you use more than one Mac (PowerBook or desktop), PowerMerge is a convenient, yet powerful program that makes sure you are always working on the latest version of your files on both Macs. Select any combination of files, folders or disks to be synchronized without rearranging your files and PowerMerge automatically updates exactly the items you have chosen in the future. PowerMerge shows you which files and folders are going to move before they do, notifies you of conflicts if files have changed on both Macs since updating and creates a Log File of which files were updated. Works via network or removable media. Sys. 6 & 7. **UT10312 FaxFACTS 6635**



FileGuard 2.7

(ASD) "It's about as much software-based security as you can get in one package." MacUser, March 1992. FileGuard 2.7 protects your hard drives and partitions from unauthorized access and (including security bypass with a system disk), copying and erasure. With it you can protect your applications and files/folder (including the System Folder) from unauthorized access, deletion, and illegal copying. FileGuard protects your Desktop from alterations by unauthorized users, and will even keep an eye on system usage with its system users log. System 7.0 compatible. Rated 5 mice from MacUser. **UT10135 FaxFACTS 6806**



WristMac 2.5

(EX Machina) WristMac doubles as a full-featured Seiko digital watch-and a portable data bank. It displays two 12-character lines, and accepts HyperCard data and text files. The WristMac includes import software, and a cable to connect to a Mac Plus, SE or II. **WristMac 2.5, Black ACC0639 \$49 WristMac 2.5, Platinum ACC0640 \$49. Also available: Executive WristMac, Gold ACC0641 \$129 and Executive WristMac, Silver ACC0643 \$129.**

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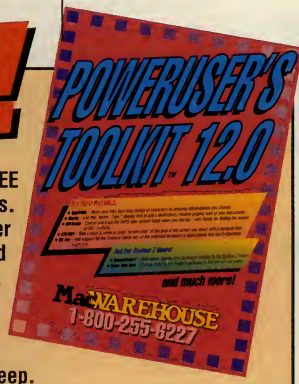
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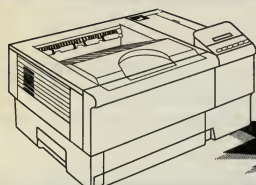
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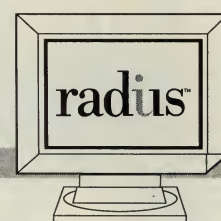
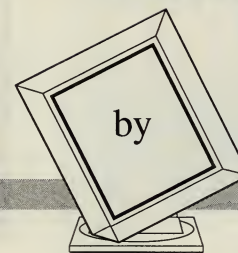
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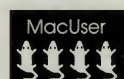
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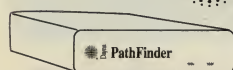
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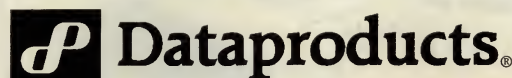
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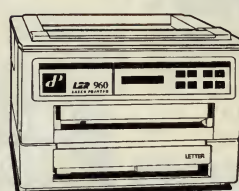
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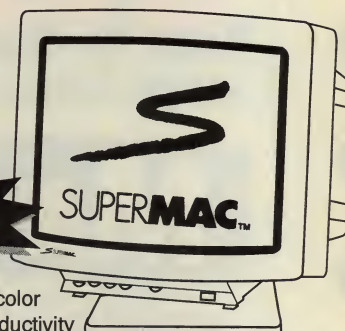
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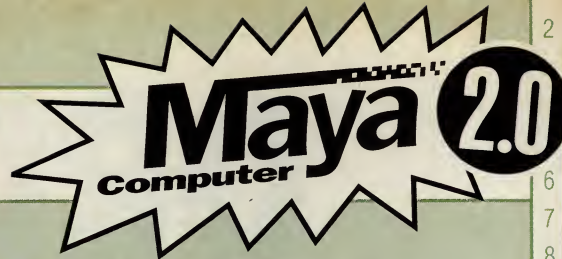
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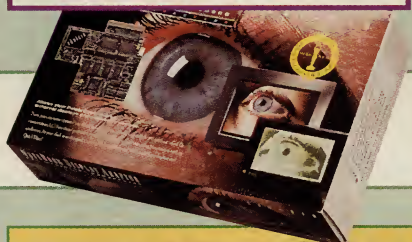


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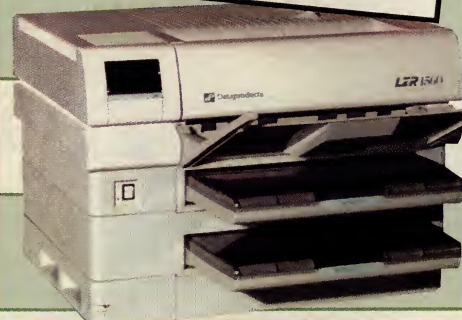
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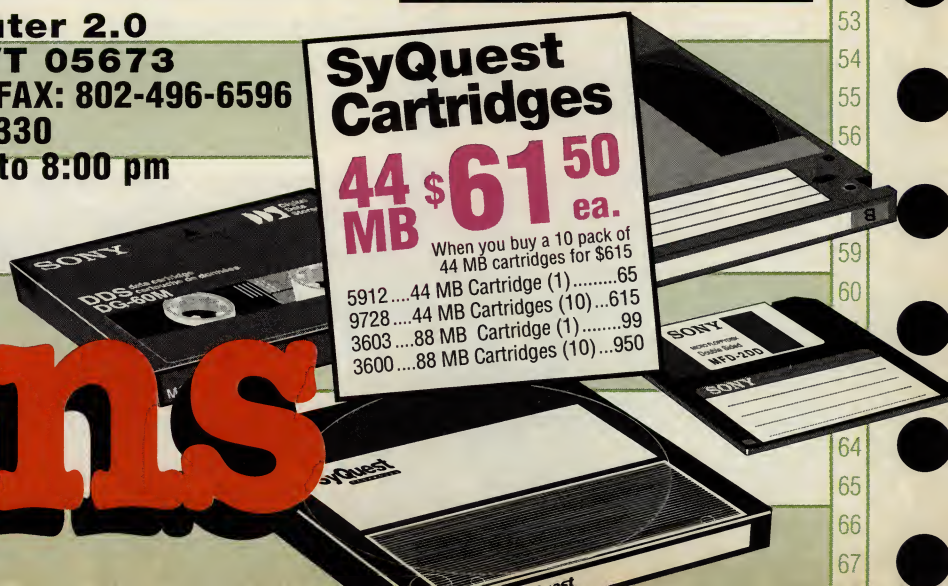
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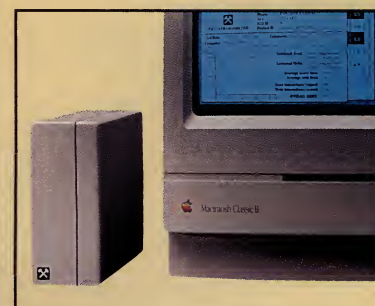
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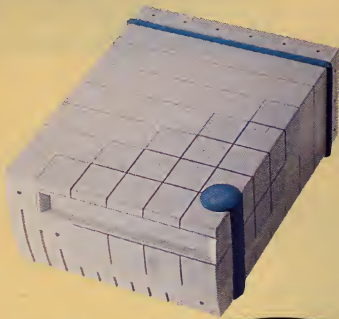
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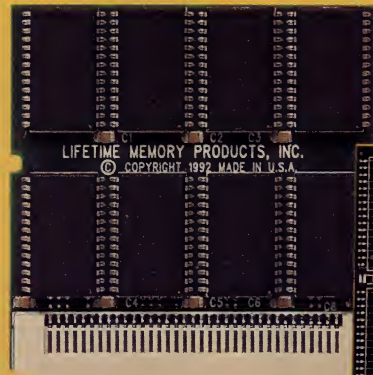


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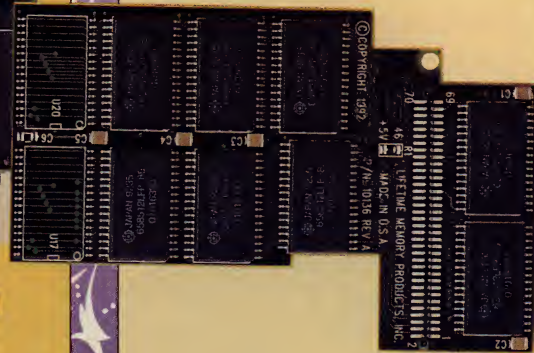
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MACINTOSH IICX	•			•							•		
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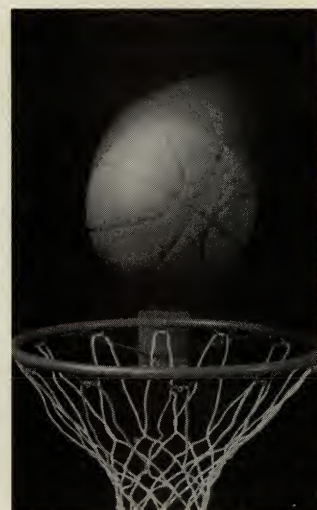
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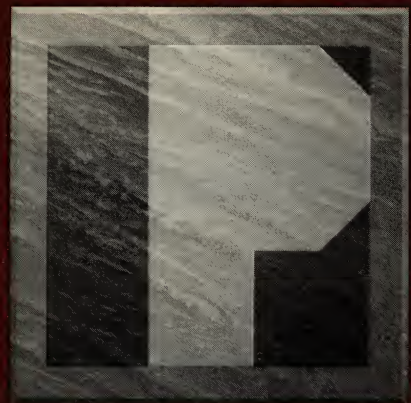
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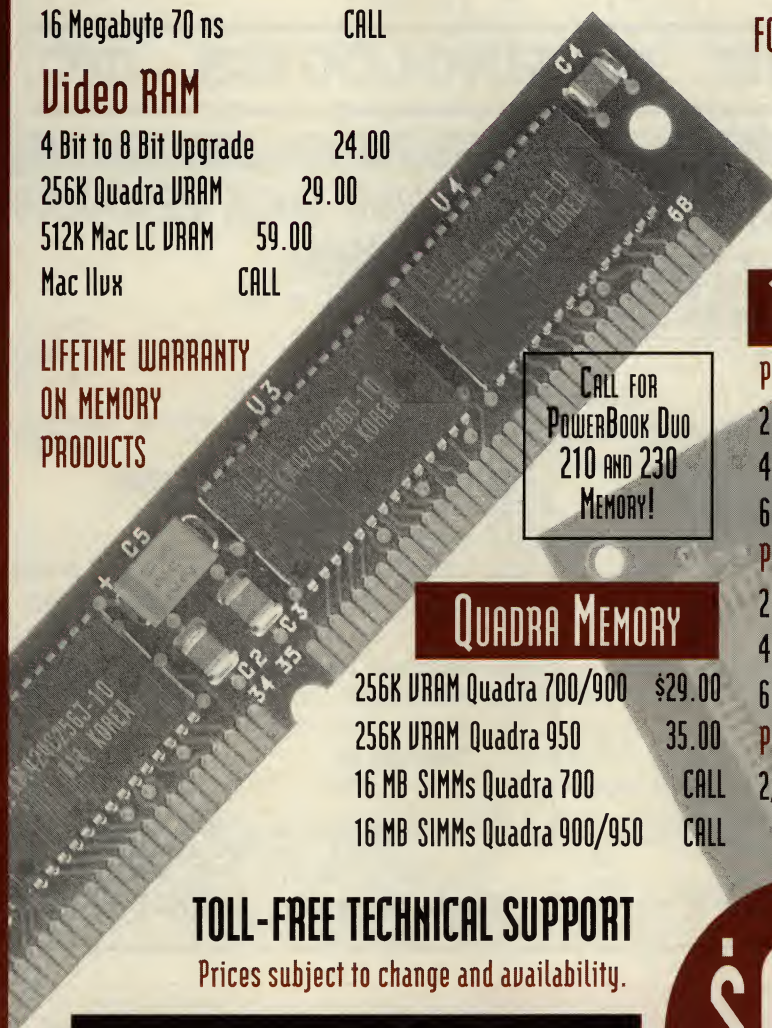
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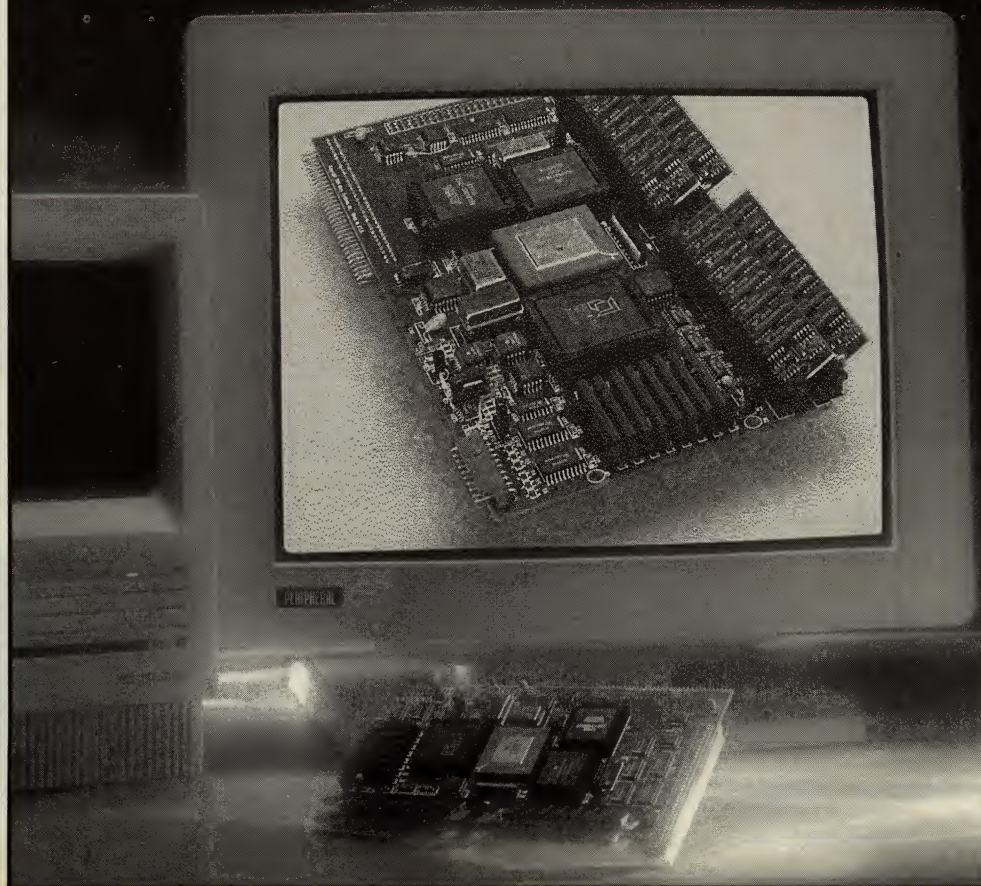
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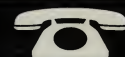
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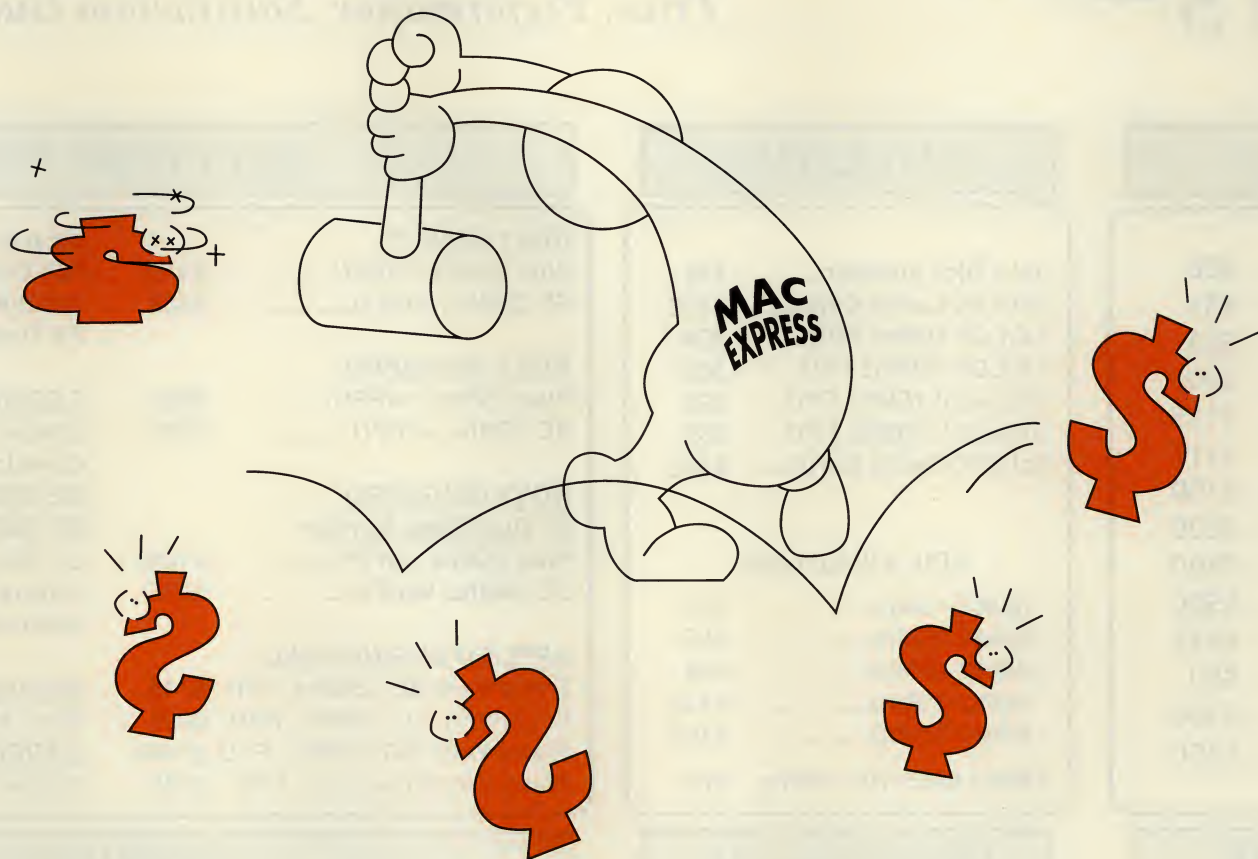
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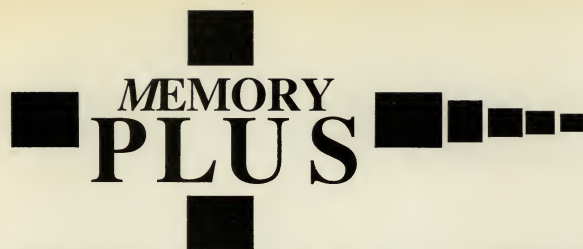


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Upgrade Tip of the Week

Upgrading Your Powerbook

The PowerBook is here to stay! The newest PowerBooks, the 160 and 180, are the most powerful and feature packed PowerBooks to date. There are several upgrade options for PowerBook owners.

✓ Increase memory

The PowerBook 100, 140 and 170 have 2MB soldered on the logic board and are expandable to a maximum of 8MB of RAM. The PowerBook 160 and 180 are expandable to 14MB of RAM. Memory can be added in 4MB or 6MB modules.

✓ Add an inexpensive VGA monitor

The Mac2VGA cable allows you to connect an inexpensive VGA monitor to your PowerBook 160 or 180.

✓ Make your PowerBook work for you with a Fax/Modem

Maximize the portability of your PowerBook by adding a Fax/Modem! Communicate with your office and clients when you are traveling or working at home.

✓ Increase your hard drive capacity

Add an 80MB or 120MB internal hard drive to your PowerBook and increase your storage capacity.

Books

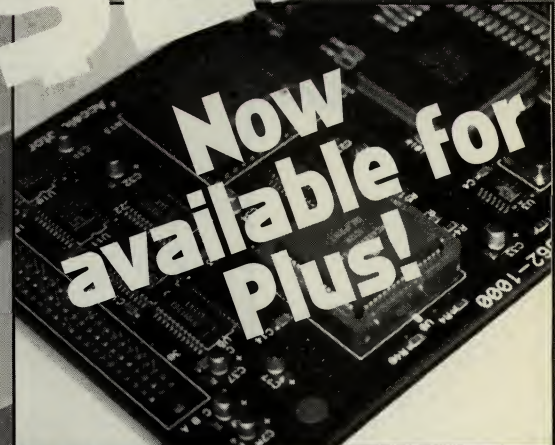
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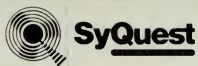
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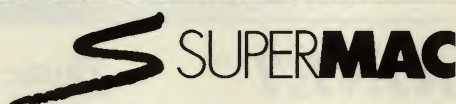


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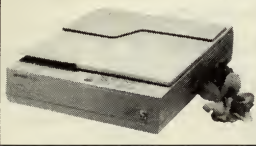
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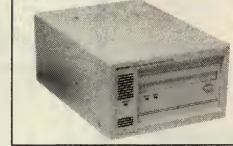
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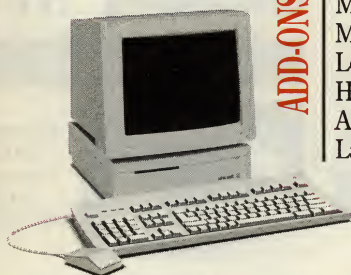
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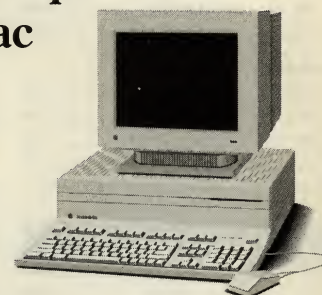
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NEC

Modems

Xeba FAX/Modem 2400/9600 129
v.42bis 9600 bps FAX and 2400 bps modem. Includes QuickLink II Mac software & cable. Hayes compatible, self diagnostics.

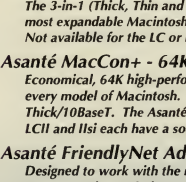
PowerBook Portable FAX/Modem 199
Solectek battery powered v.42bis 9600 bps FAX and v.22bis 2400 bps MNP 5 modem. Includes charger, Mac software and cable.

Ethernet & LocalTalk



Asante Print 349
An inexpensive Ethernet-to-LocalTalk converter that easily connects one or two LocalTalk peripherals to an Ethernet network. With no switches to set or installation software to load, it is smart enough to work right out of the box. Two configurations, Thick/Thin or Thick/10BaseT.

LocalTalk Connectors - 3-pack 29
LocalTalk Connectors - 10-pack 89
Our LocalTalk connectors provide you with a cost-effective alternative to more expensive models. Fully PhoneNet compatible. Includes a 4' RJ11 extension cord and terminator.



ASANTÉ

Asanté MacCon3 - 64K 199
The 3-in-1 (Thick, Thin and 10BaseT) Ethernet card for most expandable Macintoshes including the IIsi and SE/30. Not available for the LC or LCII.

Asanté MacCon+ - 64K 159
Economical, 64K high-performance Ethernet for almost every model of Macintosh. Select either Thick/Thin or Thick/10BaseT. The Asanté MacCon+ models for the LC, LCII and IIsi each have a socket for a co-processor.

Asanté FriendlyNet Adapters 79
Designed to work with the new Apple Ethernet cabling system - a plug-and-play networking system which makes Ethernet connectivity as simple and easy as LocalTalk.

Asanté 10BaseT Hub/8 239
An economical way to expand your Ethernet network using unshielded twisted pair wiring (10BaseT).

Asanté 10BaseT Hub/12 479
A more sophisticated and larger version of the Asanté 8-port Hub. The most economical way to expand your Ethernet network using unshielded twisted pair (UTP, 10BaseT). Fully supports IEEE specifications.

AsantéHub 1012 479
A 12-port, intelligent 10BaseT hub that offers all the features and benefits of a high-end enterprise hub for a departmental price. Built-in expansion slot for internet-working option cards (optional SNMP in-band module). The RS232 port provides access via remote dial-up, and the RJ45 and RJ21 allows connections for direct-to-computer or punch-down block connections. Multiple hubs can be interconnected via BNC, RJ45 and AUI. Works with AsantéView software (optional) for control either directly or remotely. Out-of-band management for PC's & Macs.



Verbatim

Verbatim Optical Media:

	1 to 4	5 +
128 Meg. 3-1/2" Optical	59	55
128 Meg. 3-1/2" Optical 5-Pk	255	235
600 Meg. 5-1/4" Optical Plastic ..	109	105
600 Meg. 5-1/4" Optical P 5-Pk ..	495	475

CoStar Printers

\$479

CoStar

AddressWriter personal envelope and label printer

AddressWriter Printer 479
It takes only 15 seconds to print a #10 size envelope using the AddressWriter's 144 x 144 impact dot-matrix print head. The AddressWriter can be attached directly to your computer or share on a network with the optional AppleTalk Network Adapter. Holds 100 envelopes or 200 postcards. The optional label feeder will handle a variety of pin-fed labels for added convenience and value. Specify 110 VAC or 220 VAC.

Label Feeder Adapter 75
AppleTalk Network Adapter 189
AppleTalk 5-User Site License 139

Scanners



Tamarack 600 Color Scanner:

24-Bit Color Scanner - 8.5" x 11.5"	979
Slide Attachment (shown in photo)	549
PhotoShop LE (limited version)*	99
PhotoShop 2.0 (full version)*	199

Relax Color Scanner: (Epson Engine)

24-Bit Color Scanner - 8.5" x 11.5" 110 VAC	999
24-Bit Color Scanner - 8.5" x 11.5" 220 VAC	1,099
Color Studio LE (limited version)*	79
Color Studio 1.5 (full version)*	159

Umax Color Scanners:

UC630** - 24-Bit 600 DPI - 8.5" x 14"	1,149
UC630 Transparency/Slide Attachment	789
UC630 Auto Document Feeder	479
UC1200S** - 24-Bit 1,200 DPI - 8.5" x 14" ..	2,999
UC1200S Transparency/Slide Attachment	889

* with purchase of scanner, ** includes PhotoShop 2.0

Supra Modems

All Supra Products have a 5-year Warranty

Supra Modem 2,400 89
v.22bis 2,400 bps modem. No software or cables.

Supra Modem 2,400 - MacPac 119
v.22bis 2,400 bps modem (9,600 with data compression). Complete package includes Macintosh software and cable.

SupraFAX Modem Plus 2,400 199
2,400 bps Modem/9,600 send-receive FAX. v.42bis data compression for up to 9,600 bps data in a low-cost package. Includes STF Technologies and MicroPhone 1.7 software and cable.

SupraFAX Modem v.32 9,600 299
9,600 bps Modem/9,600 send-receive FAX. v.42bis compression for up to 38,400 bps data. Includes STF Technologies and MicroPhone software & cable. Performance at low-cost.



SupraFAX Modem 14,400 349

SupraFAX Modem v.32bis 14,400 349
14,400 bps Modem/14,400 send-receive FAX. v.42bis compression for up to 57,600 bps data. Includes STF Technologies and MicroPhone software & cable. Complete. Why pay more?



\$199 CoStar

LabelWriter II & LabelWriter II Plus personal label printers

The LabelWriter II and II Plus use direct thermal input technology to produce high-quality labels in a variety of sizes. It takes less than 7 seconds to print a label. The LabelWriter can be attached directly to your computer or share on a network with the optional AppleTalk Network Adapter.

LabelWriter II Mac 199
Handles up to 350 labels per roll. Maximum label size: 1-1/8" x 3-1/2". Prints one label in 3-1/2 seconds.

LabelWriter II Plus Mac 299
Handles up to 700 labels per roll. Maximum label size: 2-1/4" x 4". Prints one label in 3-1/2 to 7 seconds.

AppleTalk Network Adapter 189
AppleTalk 5-User Site License 139

SHARP JX-320 \$1,199

16 Million Color and 256 Grayscale Scanner - 300/600 DPI

An affordable, fine quality, flatbed 8-1/2" x 11", 24-bit color scanner for business and professional applications.

Sharp's patented one-pass system ensures high quality color while reducing scan times. 16 million color and 256 grayscale at 600 DPI using Sharp's proprietary algorithm software. By strobing three colored fluorescent bulbs through filters the Sharp system ensures optimal color accuracy and eliminates misregistration.

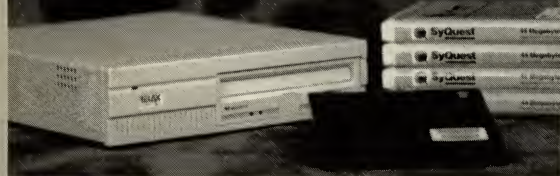
The Sharp JX-320 is the first color scanner fully compliant with the new SCSI-2 standard which eliminates the need for special drivers and increases software compatibility.

Includes the full version of PhotoShop 2.0. OCR compatible. Built-in command set includes: downloadable Gamma Tables; Edge Emphasis; Brightness; and, Lightness. 110 VAC only.

Sharp JX-320 Color Scanner 1,199
Transparency Option JX-32F3 899

SyQuest - Bernoulli Removable Drives

2-Year Warranty!



Bernoulli Mac 90
\$499

Omega has enjoyed an excellent reputation for years as the provider of high quality removable storage for IBM computers.



Now they have brought their years of experience to the Macintosh.
90 megabytes of storage in each data cartridge.
Includes software and cables.

5-year warranty on all data cartridges!
DC2120 Cartridges - \$169



Complete! Includes cartridge, cables, and software!

\$399 \$499

Mobile 44 SQ555 Mobile 88 SQ5110

Cartridges: 1 to 4 5 to 9 10 +
SQ400 - 44 Meg. Cartridge 68 62 Call
SQ800 - 88 Meg. Cartridge 109 96 Call

Hard Disk Drives - Mac, IBM & SUN

Introducing the FreeLance™

Desktop performance that fits in your pocket!

Our powerful 80MB, 120MB and 160MB FreeLance drives are designed for the Apple PowerBook computers - we even use the same quality drives Apple uses! Light (less than 10 ounces) and fast (12ms seek time). The FreeLance feature quiet and reliable Quantum Go•Drives for added value. Our FreeLance Value Pack includes everything you need to work with the PowerBook including a power supply and SCSI cable for the Macintosh. The FreeLance Dock™ adds battery power and charger for convenience and extended use on-the-go.



FreeLance Drives:

80 Meg. FreeLance Go•Drive 469
120 Meg. FreeLance Go•Drive 599
160 Meg. FreeLance Go•Drive Call
Includes your choice of 110V or 220V power supplies and a PowerBook or standard Macintosh SCSI cable.

FreeLance Dock, Battery & Charger 229

This is a complete package, including your choice of 110V or 220V charger, a PowerBook 140-180 compatible battery, transportable power cable and SCSI cable. Use the FreeLance Dock on-the-go or in the office. The battery is interchangeable with the PowerBook's. You can even fully recharge your PowerBook's battery in just 45 minutes while you're working.

FreeLance Options:

PowerBook Battery - 140-180 49
SCSI Cable - DB25M/DB25M 19
SCSI Cable - DB25M/Cent50M 19
Adapter - DB25M/HDI30 19

\$1,899

1.2 Gig. Sierra

Light-weight and rugged, the Sierra is the affordable and transportable hard disk!



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Professional data recovery is now available for hard disk, rewritable optical and removable media drives. Call for more information



170 Meg. Pocket Portable \$449

Small, light-weight, and low power best describes this state-of-the-art drive system. Dimensions 1 x 4 x 8!

42 Meg. Pocket - Quantum, 19 ms. 249
85 Meg. Pocket - Quantum, 17 ms. 329
127 Meg. Pocket - Quantum, 17 ms. 389
170 Meg. Pocket - Quantum, 17 ms. 449

Seagate	3-1/2" Half Height	Internal	External
108 Meg. - ST1133N, 15 ms.	299	359	
240 Meg. - ST3283N, 12 ms.	519	579	
1.0 Gig. - ST11200N, 14 ms. ...	1,539	1,599	
5-1/4" Full Height - WREN			
1.0 Gig. - ST41200N, 15 ms. ...	1,439	1,499	
1.4 Gig. - ST41651N, 15 ms. ...	1,659	1,719	
1.9 Gig. - ST42100N, 12.9 ms. ...	1,939	1,999	
5-1/4" Full Height - ELITE Ultra-High Performance			
1.4 Gig. - ELITE-I, 11.5 ms.	2,139	2,199	
2.1 Gig. - ELITE-II, 11 ms.	3,089	3,149	
3.5 Gig. - ELITE-III, 11 ms.	3,939	3,999	

Fujitsu	3-1/2" Half Height	Internal	External
425 Meg. - 2623SA, 9 ms.	899	959	
520 Meg. - 2624SA, 9 ms.	1,039	1,099	
5-1/4" Full Height			
960 Meg. - 2266SA, 11.5 ms.	1,639	1,699	
1.7 Gig. - 2652SA, 11.5 ms.	2,639	2,699	

Maxtor	3-1/2" Low Profile/Low Power	Internal	External
120 Meg. - 7120S, 15 ms.	339	399	
213 Meg. - 7213S, 15 ms.	479	539	
5-1/4" Full Height			
645 Meg. - XT8760, 16.5 ms. ...	1,399	1,459	
1.5 Gig. - Panther, 13 ms.	1,799	1,859	

Conner	3-1/2" Half Height	Internal	External
42 Meg. - CP-3040, 25 ms.	239	299	
85 Meg. - CP-30080E, 17 ms.	269	319	
170 Meg. - CP-30170E, 19 ms.	339	399	
210 Meg. - CP-30200, 12 ms.	469	529	
545 Meg. - CP-30540, 12 ms. ...	1,039	1,099	

Hewlett Packard	3-1/2" Half Height	Internal	External
400 Meg. - HP2235, 12.6 ms. ..	1,199	1,259	
1.0 Gig. - HP2247, 12.6 ms.	2,039	2,099	
5-1/4" Full Height			
1.0 Gig. - HP97558, 13.5 ms. ...	1,939	1,999	
1.3 Gig. - HP97560, 13.5 ms. ...	2,179	2,239	

Drives are complete - nothing else to buy - all drives include software and cables. Every drive is tested and loaded with Apple System software and utilities.

Special Purchase



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1-Year Warranty! 14 ms. average access.
External Model \$1,059

510 Meg. Hard Disk



Nobody knows more about performance hard disk drives than Seagate! We made a special purchase of this top-of-the-line model. Now for a limited time, you can purchase a 510 megabyte drive for the cost of a 400 megabyte model. This is a limited time offer, and only while quantities last!

Save 12% or \$140. Regular Price \$1,139.
Internal model for the Macintosh. Model ST1581N.

Discontinued Drives - Save Up To 50%

These are one-of-a-kind items at special close-out prices. All include factory warranty.

30-day money back guarantee!

Prices are for internal models -

for an external case add \$60.

Limited quantities - subject to prior sale!

Hard Disk Drives:

20 Meg. Seagate ST325N	119
40 Meg. Maxtor 7040S	169
46 Meg. Seagate ST157N	169
80 Meg. Maxtor 7080S	239
90 Meg. Fujitsu M2612SA	239
180 Meg. Fujitsu M2614SA	439
210 Meg. Quantum P210S	559
300 Meg. WREN ST4350NM	749
320 Meg. Fujitsu M2622SA	769
330 Meg. WREN Runner	999
425 Meg. Seagate ST1481N	839
435 Meg. Seagate ST2502NM	839
600 Meg. WREN ST4702NM	979
645 Meg. WREN ST4766NM	999
660 Meg. WREN Runner	1,399
1.0 Gig. Maxtor Panther	1,699

Rewritable Optical Drive:

600 Meg. Ricoh 5030E-II demo ...	1,399
Factory reconditioned - 1-year parts and labor warranty	
1.0 Gig. Maxoptix Tahiti-I demo ...	1,999
Factory reconditioned - 1-year parts and labor warranty	

Tape Drives:

60 Meg. TEAC MT-2ST/45S2	299
2.0 Gig. Wangdat DAT	999

CD-ROM Drive:

Chinon CD-ROM CDS431	399
Factory reconditioned - 1-year parts and labor warranty	

Service -

Since 1978, our Commitment to Customer Satisfaction, has meant quality products and service. Our dedicated service and support team recently earned MacWorld Magazine's Service Hero Award. Our Express Service Program (ESP) will have you up and running in 48 hours - guaranteed!

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Drives include media, software and cables!

Tape Drives:

160 Meg. Tape Vista - TEAC	499
250 Meg. Tape Vista - Archive	699
600 Meg. Tape Vista - TEAC	779

DAT 4 mm Drives:

2.0 Gig. DAT Sierra - Archive	1,299
2.0 Gig. DAT Sierra - ExaByte DAT ..	1,349
2.0 Gig. DAT - Hewlett Packard	1,399

Compression DAT 4 mm Drives:

8.0 Gig. DAT Sierra - Archive	1,499
8.0 Gig. DAT Sierra - ExaByte DAT ..	1,549
8.0 Gig. DAT - Hewlett Packard	1,599

ExaByte Helical Scan 8 mm Drives:

2.2 Gig. Tape Vista - ExaByte 8200 ..	1,949
5.0 Gig. Tape Vista - ExaByte 8500 ..	3,199

8.0 Gig. DAT Tape

Transportable backup solution. Backup software & tape included!

\$1,599



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Selected for performance, value and service. Quality at low cost. Perfect for backing up hard disks up to 600 megabytes. Complete package includes software, cables and media. MACWORLD - 12/92.



Media for:

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160 Meg. Teac Tape Drive	24	19	1.3 Gig. DAT 4 mm - Data Grade ..	19	17
150 Meg. DC-6150 Tape Drive	29	25	2/8 Gig. DAT 4 mm - Data Grade ..	29	27
250 Meg. DC-6250 Tape Drive	33	29	2/5 Gig. ExaByte 8 mm - Data	18	13

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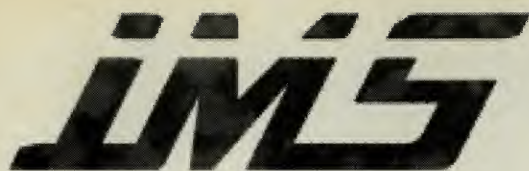
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External 2400 bps Send/Receive Data Modem **Only!** \$79

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2400 bps Send/Receive Data Modem \$99

• Includes Quick Link II™ Mac software & cable

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Maccon + Thick/10Base T (64k)	\$169
Maccon + Thick/Thin/10Base T (64k)	\$239
Maccon + 30Ie Thick/Thin (64k)	\$169
Maccon + IIsi Thick/10Base T (64k)	\$259
IISi/SE/SE/30 Friendly Net/10Base T (16k)	\$239
Maccon + LC EN 10LC to 10Base T	\$169
Maccon + LC/LCII Thin w/FPU	\$289
Maccon Thick/10Base T (32k)	\$169
10Base T HUB w/12 10T Thick/Thin/10Base T	\$499
10Base T HUB w/8 Thin Port	\$258
SCSI Ethernet Thick/Thin/10Base T	\$290
"SCSI Ethernet for PB, 10Base T"	\$290
SCSI Ethernet 10Base T (w/SCSI Cable)	\$259
"SCSI Ethernet for PB, Thick/Thin/ 10 Base T w/SCSI Cable"	\$359
MAU 10Base T Media Attachment	\$89
Friendly Net Adaptor - 10Base T	\$89
Friendly Net Adaptor - Thin	\$89
Friendly Net Adaptor - Thick	\$89



44MB	\$399
88MB	\$499
44MB cartridge	\$63
88MB cartridge	\$98

SyQuest DOS Solutions

8 Bit SCSI Host Adaptor	\$95
16 Bit SCSI Host Adaptor	\$145

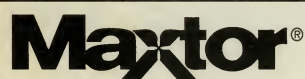
- Drives ship with one cartridge
- Drives have two year warranty
- Cartridges have one year warranty



Platinum II Performance
External Drives

Capacity	Model	ms	External
1.0GB	PD 1000-II	15	\$3,989.00
1.3GB	PD 1300-II	11	\$5,390.00
1.75GB	PD 1750-II	14	\$6,590.00
2.1GB	PD 2100-II	11	\$7,590.00

• Drives have one year CMS warranty



Unformatted Capacity	Model	ms	Int.	Ext.
120MB	7120XT	15	\$339	\$399
207MB	7213	15	\$489	\$549
330MB	LXT-340	15	\$739	\$799
535MB	LXT-535	12	\$1049	\$1109
645MB	XT-8760S	16.5	\$1229	\$1329
1.2GB	PO-12S	13	\$1519	\$1619
1.7GB	PO-17S	13	\$1759	\$1859

- 3.5" drives have one year warranty
- 5.25" drives have two year warranty

Quantum

Unformatted Capacity	Model	ms	Int.	Ext.
42MB	ELS42	19	\$185	\$245
85MB	ELS85	17	\$269	\$329
127MB	ELS127	17	\$329	\$389
170MB	ELS170	17	\$385	\$445
240MB	LPS240	10	\$589	\$649
425MB	PRO425	9	\$899	\$959
80MB	Go•Drive	17	\$329	\$389
120MB	Go•Drive	120	\$459	\$519

- ELS, LPS, PRO drives have two year warranty
- GO-drives have one year warranty



PowerCache	w/o FPU	w/FPU
16Mhz	\$399*	\$459*
33Mhz	\$539*	\$659*
40Mhz	\$749*	\$909*
50Mhz	\$1,079*	\$1,319*
Equalizer LC	\$169	\$239
*PowerCache Adapter		\$40
FastCache Cards		
IIsi		\$279
IIsi w/68882		\$349
IIci		\$215
'040 (128k Q700/900)		\$259
'040 (128k Q700/900/950)		\$399
* for Classic, SE, SE/30, II, IIx, IIcx, IIci, IIsi and LC		
• 30 day money back guarantee		



Unformatted Capacity	Model	ms	Int.	Ext.
425MB	M2623FA	9	\$899	\$959
520MB	M2624FA	9	\$1029	\$1089
1.2GB	M2266	14.5	\$1589	\$1689
2.0GB	M2652SA	14.5	\$2585	\$2685

- Drives have five year warranty

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& network
pricing.

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ship with
'SCSI Specialist'
software, and all
necessary cabling.
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PowerBook™ Modems

PB1 - Internal 9600 bps Send/4800 bps Receive Fax. 2400 bps Send/Receive Data Modem. **\$145.00**

PM4 - Internal V.17, 14,400 bps Send/Receive Data Modem with V.32, V.42, V.42 bis, MNPIO. **\$439.00**

Desktop Modems

ComStation 1 - External 9600 bps Send/4800 bps Receive Fax. 2400 bps Send/Receive Data Modem. **\$149.00**

ComStation 5 - External V.17, 14,400 bps Send/Receive Data Modem with V.32, V.42, V.42 bis, MNPS (Includes Integrated Fax OCK Software. **\$490.00**

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—MacUser, April 1992



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PROLINE <small>MADE IN THE U.S.A.</small>						HEWLETT PACKARD						ACADEMY						QUANTUM					
Model	Unformatted Capacity	Seek	Internal Xfer	Internal	External	Model	Unformatted Capacity	Seek	Internal Xfer	Internal	External	Model	Unformatted Capacity	Seek	Internal Xfer	Internal	External	Model	Unformatted Capacity	Seek	Internal Xfer	Internal	External
220	234MB	3.5"	12.6ms	14-20Mbit	\$ 769 \$ 849	40	42MB	1"Hi	19ms	8-12Mbit	\$ 209 \$ 289	82	85MB	1"Hi	9ms	12-16Mbit	\$ 269 \$ 349	127	120MB	1"Hi	16ms	15-30Mbit	\$ 379 \$ 459
402	425MB	3.5"	12.6ms	14-20Mbit	\$ 1,039 \$ 1,099	82	85MB	1"Hi	9ms	12-16Mbit	\$ 269 \$ 349	127	120MB	1"Hi	16ms	15-30Mbit	\$ 379 \$ 459	170	170MB	1"Hi	17ms	8-12Mbit	\$ 399 \$ 479
1003	1.2GB	3.5"	10.5ms	24-42Mbit	\$ 1,999 \$ 2,079	127	120MB	1"Hi	16ms	15-30Mbit	\$ 379 \$ 459	240	240MB	1"Hi	16ms	15-30Mbit	\$ 579 \$ 649	502	525MB	1"Hi	10ms	18-38Mbit	\$ 1,129 \$ 1,199
1029	1.2GB	FH	13.5ms	23Mbit	\$ 1,679 \$ 1,799	170	170MB	1"Hi	17ms	8-12Mbit	\$ 399 \$ 479	1170	1225MB	3.5"	10ms	18-38Mbit	\$ 1,779 \$ 1,849						
1290	1.6GB	FH	13.5ms	23Mbit	\$ 2,079 \$ 2,199																		
1650	2.1GB	FH	11.5ms	24-42Mbit	\$ 2,679 \$ 2,799																		
1910	2.4GB	FH	11.5ms	24-42Mbit	\$ 3,079 \$ 2,799																		
PROLINE <small>MADE IN THE U.S.A.</small>						FUJITSU						ACADEMY II <small>NEW!</small>						TOSHIBA					
500	520MB	3.5"	12ms	19-24Mbit	\$ 1,069 \$ 1,139	830	870MB	3.5"	12.5ms	12-24Mbit	\$ 1,249 \$ 1,329												
EDGE <small>NEW!</small>						RARE (DEC)						SENTRY						TAPE BACKUP					
1000	1.2GB	3.5"	9.5ms	33Mbit	\$ 1,999 \$ 2,079							250	Sankyo 1/4" Tape Drive										
												525	Sankyo 1/4" Tape Drive										
												1000	Sankyo 1/4" Tape Drive										
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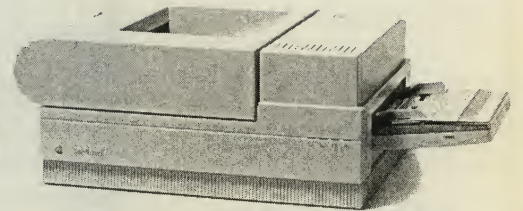
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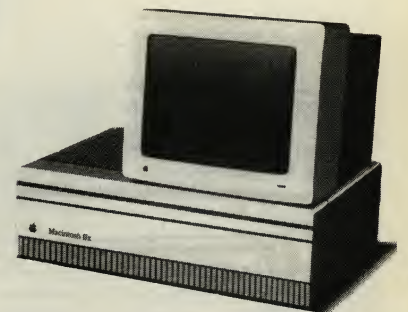


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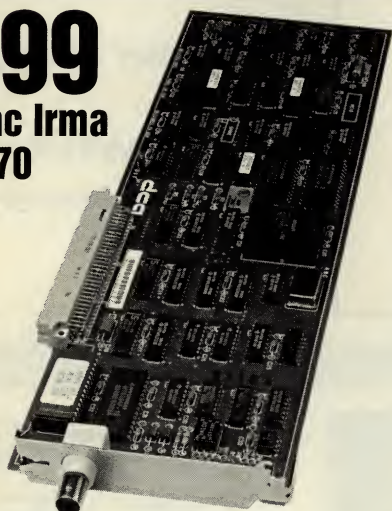
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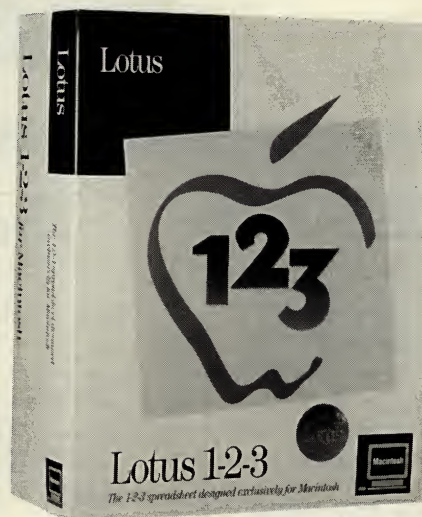
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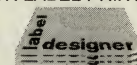
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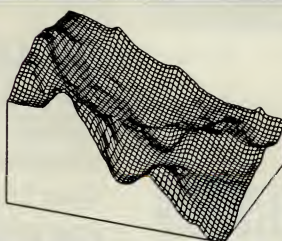
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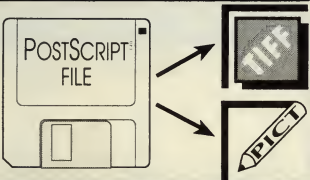
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By Kirsten L. Parkinson

New York — Pastel Development Corp. will roll out an address book add-on to DayMaker and a networked version of the personal information management program at this week's Macworld Expo.

The DayMaker Address Book, due to ship for \$79.95 in the first quarter, will include fields for name, address, phone and fax number, and electronic-mail addresses, as well as several user-definable fields.

Address Book users will be able to double-click on an entry in the address book, and icons will appear for the areas of DayMaker, such as the to-do list or weekly calendar view, that have entries relating to that person.

The program also will include an auto-dialing function that lets users double-click on a phone number to dial it. It also can import and export tab-delimited ASCII text.



The networked version of DayMaker includes a Time view that lets users schedule activities by blocking out time in a grid format.

Registered users of DayMaker can purchase the DayMaker Address Book for \$39.95 for a limited time. A package bundling the two programs will be available later this year for an undetermined price.

Pastel also will be announcing a multi-user version of DayMaker 2.0 that will let users create public calendars to be shared over the network as well as maintain private calendars on their desktops.

Due later this month, the network version also will add a Time view that lets users set activities by blocking out time periods in a

grid format. Other features include multiple levels of access privileges, an automatic meeting function that shows time blocks in which all meeting participants are free, and an updater that synchronizes PowerBook and desktop files.

A single-user version of DayMaker will remain \$129.95; a five-user package will be \$495.95; a 10-user bundle will be \$850.95.

Pastel Development Corp. is at 113 Spring St., New York, N.Y. 10012. Phone (212) 941-7500 or (800) 727-6732; fax (716) 873-0906. □

PowerBook

From Page 1

Apple's first color PowerBook, the 165c, will use a 9-inch passive-matrix display, which is not as crisp or quick to respond as the 180's active-matrix gray-scale screen.

Color is likely to slightly reduce how long a PowerBook can run on a fully charged battery.

The 165c, expected to be available in both 4/80 and 4/160 configurations, will resemble the PowerBook 180 in all other respects including a 33-MHz processor and a math coprocessor. The 4/80 configuration should list for about \$3,600; the 180 4/80 currently retails for \$4,109.

▶ Active-matrix gray-scale Duo.

The Duo 210 and 230 use a passive-matrix gray-scale LCD because an active-matrix screen wouldn't fit the Duo's slim form factor. However, Apple reportedly has been able to obtain an active-matrix gray-scale LCD thin enough to squeeze inside the Duo's case. In addition to avoiding a redesign of the Duo's sleek form, conforming to the current case will guarantee that an active-matrix Duo will fit Apple's Duo Dock.

The active-matrix Duo will use a 33-MHz 68030; a 160-Mbyte hard drive will be optional, sources said.

▶ Active-matrix color.

True power users may want to wait until summer, when, sources said, they can order a 180-based model with a color active-matrix display. The new system will be slightly larger and definitely more expensive than the passive-matrix 165c.

▶ **Color Duo.** Apple will take longer to bring color to the dockable PowerBooks and may be forced to move to a slightly larger case, making the new system incompatible with the current Duo Dock (but not MiniDock designs that slip behind and underneath Duos). However, the company may be able to offer a replacement top cover, making the Duo Dock tall enough to accommodate the new system.

About the time that the color Duo may make its debut, sources said Apple will ship a Duo Dock with Ethernet and a 32-Kbyte CPU cache.

As reported previously, Apple is facing serious constraints in its ability to meet the ever-growing demand for PowerBooks. At the current rate of sales increase, the company will easily double the installed base of PowerBooks by selling more than 400,000 machines this year, sources said.

With new PowerBooks coming faster than ever before, backlogs could go from a yearly inconvenience to a constant hassle. □

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DayStar accelerator prices chopped by up to 38 percent

By Raines Cohen

Flowery Branch, Ga. — DayStar Digital Inc. this week will announce 20 percent to 38 percent price cuts in all of its accelerator products.

The company said it is responding to an upcoming price decrease by Motorola Inc. on 68030 and 68040 CPUs. Motorola's lower prices will take effect Jan. 10; DayStar is lowering its prices Jan. 6.

The largest decrease will be on DayStar's 50-MHz PowerCache with 68882 floating-point coprocessor, reduced to \$999 from \$1,599. The recently introduced 33-MHz Turbo 040 card will drop to \$1,599 from \$1,999.

Other cuts will include a 35 percent price drop on the 50-MHz PowerCache without FPU, down to \$849 from \$1,299. A 40-MHz ver-

sion of the card now will sell for \$749 (\$649 without FPU), down from \$1,099 and \$899, respectively. The 33-MHz model will go as low as \$449 without FPU, or \$549 with one, down from \$649 and \$799.

In addition, DayStar this week will announce an agreement with KEPS Inc., an Eastman Kodak Co. subsidiary. DayStar in April will incorporate the KEPS Precision Sharpening application-specific integrated circuit (ASIC) technology into the Charger Plus, a new \$1,599 version of DayStar's digital signal processing board. The KEPS ASIC is found only in imaging workstations, such as the KEPS Prophecy system.

DayStar Digital Inc. is at 5556 Atlanta Highway, Flowery Branch, Ga. 30542. Phone (404) 967-2077 or (800) 962-2077; fax (404) 967-3018. □

Imaging

From Page 1

ColorSync at the expo include:

► **Electronics for Imaging Inc.** of San Mateo, Calif., will show a new ColorSync-compatible version of its EfiColor color-management software. The update will ship with Quark Inc.'s upcoming QuarkXPress 3.2, EFI's Cachet and all other applications that include EfiColor software. The company initially will release ColorSync-compatible profiles for 16 color printers and monitors from companies such as Apple, Tektronix Inc., Radius Inc., SuperMac Technology and QMS Inc. Early this year EFI will announce additional profiles for printers and scanners from Apple, Hewlett-Packard Co., GCC Technologies Inc., Seiko Instruments USA Inc. and CalComp Inc.

► **Eastman Kodak Co.** of Rochester, N.Y., will ship ColorSense, a \$499 color-matching system. ColorSense will include a photometer for measuring monitor luminance, a target image for scanner calibration, device profiles of leading color peripherals and color-correction software.

► **Savitar Inc.**, based here, will announce Version 2.0 of its ScanMatch scanner-calibration software. The update will create ColorSync scanner profiles by scanning reflective and transparent calibration targets that correspond to common film stock. Users will be able to apply calibrations from within Adobe Photoshop via a bundled plug-in.

ScanMatch 2.0 will ship next month for \$199, including a Pantone target and the ColorSync extension; upgrades are \$49. Additional calibration targets will range from \$99 to

\$199 each, and Photoshop plug-ins that support calibrated output to popular printers will be \$99 each.

► **Light Source Inc.** of Larkspur, Calif., reportedly will ship Ofoto 2.0, a ColorSync-compatible color version of its scan-optimization software (see MacWEEK, Dec. 7, 1992). Sources said Version 2.0, which uses its own non-CIE (Commission Internationale de l'Eclairage) color CMM, will be bundled with Apple's color flatbed scanner.

► **RasterOps Corp.** of Santa Clara, Calif., will announce new technology that accelerates ColorSync's default color correction by up to 18,000 times. It also will work with any ColorSync-compatible CMM. RasterOps said that by this spring it expects to ship display cards that include the technology.

► **Compumation Inc.** of State College, Pa., will announce details of a client-server system that extends ColorSync color management across a network. The unnamed server, which Compumation said it hopes to ship in the second quarter, will include a Mac workstation accelerated with a Radius Rocket card as well as a version of the company's Color Central software (see MacWEEK, Aug. 17, 1992).

► **Tektronix Inc.** of Wilsonville, Ore., will announce plans to release ColorSync profiles for its printer line in the first quarter. The profiles will ship standard with new printers, and current owners will be able to get them free.

► **Radius Inc.** of San Jose, Calif., will announce ColorSync support for its \$599 PrecisionColor Calibrator package and device profiles for its color displays. Radius next

Attaché

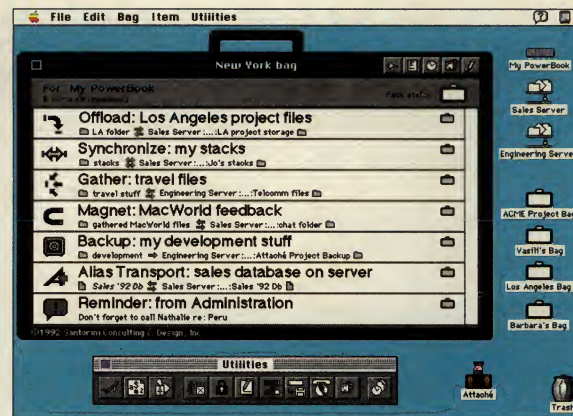
From Page 1

backing up key files on the home network or on floppies to go.

To help users avoid being stranded with orphaned aliases, bags can check aliases, copy the originals to the PowerBook and point the alias to the copy; on return, the original setup can be restored. The program also will have built-in support for AppleTalk Remote Access, enabling users to create bags that perform such tasks as logging onto the office server from a hotel room to pick up new files. Users or their managers also can build notes and reminders into bags. All operations can be previewed and logged.

► **Utilities.** Attaché's associated utilities can be launched from an icon palette within the main application; some also can be invoked at any time via hot key, if an extension accompanying the application is loaded.

Among the utilities, one called Pre-flight scans the PowerBook disk and generates a report identifying missing applications, settings files, utilities and documents, as well as conditions



Attaché, an upcoming "travelware" application, lets users or managers pack metaphorical bags that automate configuration of mobile Macs for specific users, projects and destinations.

such as low disk space and battery power. The SpaceFinder module lists files not modified recently as candidates for compression or removal.

Other modules include TravelLog, a RAM-resident note pad; TravelSafe, an automatic backup utility; Privacy, which blanks the screen or puts up a fake spreadsheet on command or after a specified interval; Yellow Pages, which provides a miniguide to telecommunications, as well as phone numbers for on-line services, airlines, hotels and car-rental agencies; and CheatSheet, which offers a pop-up screen for information such as itineraries, passwords; and phone, credit card and license numbers.

On the traveler's return, the ChangeFinder module can generate

a list of all files created and modified during the trip.

Attaché will be the second program to be published under the Santorini label; the first, an AppleShare administration utility called Server Manager, is due this month. The 3-year-old company, however, has developed several programs for other companies, including Farallon Computing Inc.'s TrafficWatch II, Dayna Communications Inc.'s Network Vital Signs and the original concept and a prototype of Fifth Generation Systems Inc.'s AutoDoubler.

Santorini Consulting & Design Inc. is at 2147 Union St., Upper Level, San Francisco, Calif. 94123. Phone (415) 563-6398; fax (415) 563-0332. □

Color Classic

From Page 1

back panel that opens to allow for easy installation of expansion cards or a replacement logic board. The machine will be able to accommodate up to a 33-MHz '030-based

board, which Apple plans to deliver this summer.

To save energy, the Color Classic will dim its display after it has been idle for a user-specified time period.

Pricing will start at less than \$1,400, sources said.

► **14-inch Color Classic.** About April, Apple will deliver a compact color Mac based on a 25-MHz '030 with PDS slot and an integrated 14-inch Trinitron color display. It also will include two speakers and will use phase-shift technology to give stereo sound a 3-D feel. This Macintosh will be like an all-in-one version of Apple's forthcoming LC III (see MacWEEK, Nov. 2, 1992), sources said.

The motherboard is RISC-ready; owners of the new CPU will be able to plug in a PowerPC once the new chip becomes available, sources said.

The machine will have the same removable motherboard design as the Color Classic. Apple plans to offer a 33-MHz upgrade by this summer and a 68040 upgrade later, sources said.

The 14-inch Color Classic will have a 5.25-inch bay for an optional CD-ROM drive, a built-in microphone, built-in support for 16-bit color and a headphone jack. It will come with 4 Mbytes of RAM, upgradable to 36 Mbytes.

Pricing reportedly will start at about \$2,200. □

Apple set to roll out color peripherals

Apple plans a major focus on imaging at Macworld Expo this week. Besides its ColorSync QuickDraw extension, sources said, Apple will ship:

► **The Apple Color One-Scanner,** a \$1,499 24-bit-color flatbed scanner that captures 300-dpi RGB (red, green, blue) images in a single pass. The scanner will be bundled with Ofoto 2.0, the new color version of Light Source Inc.'s scan-optimization software.

► **The Apple Color Printer,** a \$2,599 tabloid-size color inkjet model based on Canon U.S.A. Inc.'s 360-dpi BJC-820 Bubble Jet engine. The printer will include no processor nor RAM and will contain only a serial port. Apple will bundle GrayShare, a new software utility that spools jobs to the host Mac via LocalTalk.

Both the printer and scanner will ship with ColorSync.

► **The LaserWriter Pro 630**

and 600, \$2,999 and \$2,399, respectively, true 600-dpi laser printers based on the same 8-page-per-minute, letter-size Canon engine as Hewlett-Packard Co.'s \$2,999 LaserJet 4M.

Both run on a 25-MHz Motorola 68030 chip and include Adobe PostScript Level 2, 64 TrueType fonts and a built-in TrueType rasterizer.

The LaserWriter 630 will come with PhotoGrade software; simultaneously active EtherTalk, LocalTalk, parallel and RS-232 serial ports; and internal and external SCSI ports. The LaserWriter 600 lacks EtherTalk and SCSI interfaces and needs additional RAM to print at 600 dpi or use PhotoGrade.

► **The StyleWriter II,** a \$339, 360-dpi, 2-ppm inkjet printer that ships with GrayShare file-sharing software, a serial port, 39 TrueType fonts and a 100-sheet input tray.

Apple declined to comment. — By Matthew Rothenberg

Robert Hess contributed to this story.

Enterprise

From Page 1

cation development tools the company will announce (see MacWEEK, June 22, 1992). "It will provide the ability to develop on the Macintosh for the client-client-server environment," he said.

The first piece of this network jigsaw puzzle, the Shared Library Manager, already is shipping to developers. According to sources, it will be followed early this year by a second, enabling piece of code, the Transport Independent Interface, or TI2. This application programming interface (API) will give developers access to the Shared Library Manager's ability to load network protocol stacks and hardware drivers dynamically as applications make calls to network services.

The Shared Library Manager and TI2 API have been known collectively by the code name Enterprise Toolbox. They are, sources said, a layer of functionality that ordinary users probably will never get to know, but which developers can use to enable seamless network access in Macs and Macintosh-based servers, as well as Apple's upcoming PDAs and PowerOpen operating system.

Developers will be able to use the Shared Library Manager and TI2 API to mix and match the kinds of network services their applications can use because they provide the ability to make calls to various layers of the network model seamlessly. For example, an application will be able to make calls to a database on an Ethernet network running TCP/IP protocols, look up a user directory on an AppleTalk-based network and send messages to other applications on either network, without users having to leave the application to switch drivers.

Apple's forthcoming servers will play another critical role in the mobile connectivity drama.

Sources said Apple is developing server software that may include intelligent agents that

can act as proxies for individual users when they are not physically connected to a network. These agents, which would monitor information on the network and stored in the server, would be able to collect messages and data of particular interest to the user and deliver them the next time that user logs onto the network.

Taradalsky cited Apple's Rosebud project, a WAIS (Wide Area Information Server) client application demonstrated during the past year, as an early example of the type of intelligent agents it plans for the servers.

"We also must provide a lot of needed value to customers who have a lot of information in unstructured form," he said, adding that users will value "being able to find information whether it's stored locally or in the libraries of other providers."

Bruce Cleveland, Apple senior director of open systems, who heads the company's PowerOpen development, said the PowerPC hardware due in early 1994 will substantially enhance the company's ability to support mobile clients while providing services to heterogeneous networks.

"The platform will let us layer almost anything on top, including OCE (Open Collaboration Environment), QuickTime, AppleScript, AppleTalk or AppleShare," Cleveland said. "Then I can begin building client-server workgroup applications ... much better than [Microsoft Corp.'s] Windows for Workgroups or Windows NT."

Cleveland said PowerOpen, which will offer a Mac-like user interface running above a Unix kernel developed by IBM Corp., would probably support Windows clients, in addition to Macs and Newtons.

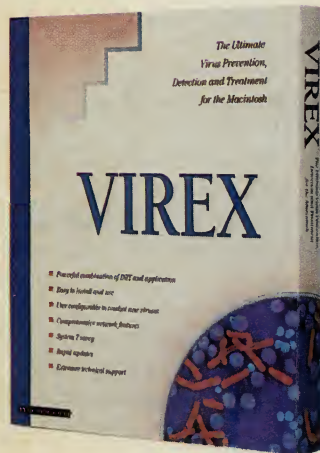
"I think of [the Mac OS] more as a user environment that hosts a variety of services and capabilities," Cleveland said. He also said Apple will be moving to a client-server world view that treats the Mac as a front end to back-end services provided in future Apple products. □

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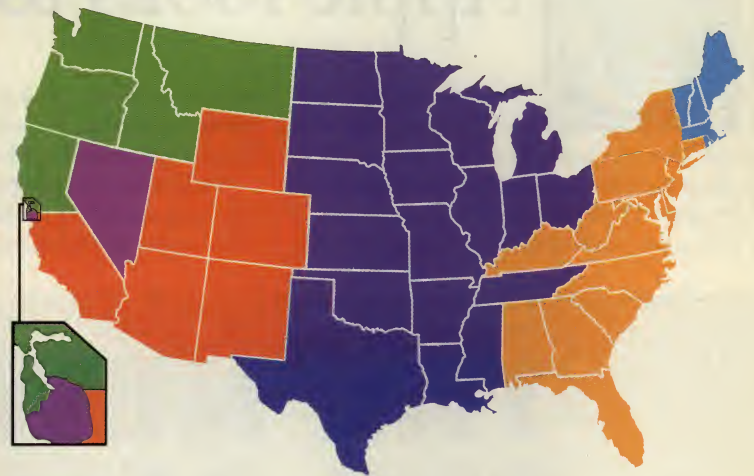
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- * Includes San Francisco, Alaska and Alberta and British Columbia, Canada
- ** Includes Manitoba and Ontario, Canada
- *** Includes New Brunswick, Newfoundland, Prince Edward Island and Quebec, Canada
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Looking ahead



Issue date	Special section Product Watch	Close for Display ads, MarketCenter, Career Opportunities	Close for Ad Showcase
Jan 18	Statistics	Jan 7	Jan 7
Jan 25	CAD	Jan 14	Jan 12
Feb 1	GW Spec. Rpt. Manufacturing tools	Jan 21	Jan 19
Feb 8	Graphics	Jan 28	Jan 26
Feb 15	GA Spec. Rpt. Modems	Feb 4	Feb 2
Feb 22	Presentations	Feb 11	Feb 9
March 1	Mapping software	Feb 18	Feb 16
March 8	GW Spec. Rpt. Database add-ons	Feb 25	Feb 23



Apple looks to Asia for answers

The new year has finally arrived, and now it's time to let the games begin! Of course, which games you mean depends on which games you play. The President-elect has his hands full, as do a number of travel agents and mov-

ing companies. For the Knife's crowd, the games begin in San Francisco because the Macworld Expo is in the house.

While most of us will spend this week in a state of permanent awe at all the neat new technologies on display and the implications

of various announcements, the Knife will devote at least some of his waking hours to pondering both what might have been and what might still be. For example, if last month's apparently erroneous rumors of a Apple-Novell merger or buyout had only

been true, the AT&T-Novell agreement would have put Apple in the Unix catbird seat.

Irony aside, a much more credible report has reached the Knife: Apple's deal with Taiwan's Acer Inc. is as good as done. All the details may never be known, as is common with these high-level agreements, but sources are certain that PowerBook 145 production will soon become the responsibility of Acer.

Offloading production to third parties makes a lot of sense, particularly in view of Apple's lackluster track record in forecasting demand and relying on its own manufacturing capabilities. And it makes even more sense when you remember Apple's stated plan to introduce new PowerBook models every three to six months. Those of us growing weary of lengthening delivery schedules perhaps should learn the fine art of patience now, while we've got all this time on our hands.

Demand examples. Apple, in general, tries to ensure that supplies of current models are exhausted before the replacement models begin shipping. This is the case of the Mac IIsi, which the company needs to clear out to make room for a new model due next month. One scheme Apple developed was an employee purchase program that features a IIsi complete with color monitor for \$1,300. The program turned out to be a big hit, and lo and behold, there's now a short-term backlog.

While we're at it, we might as well pass on the Knife's report that Apple's new color printer, to be announced at the show this week, won't be available in any meaningful quantities until April. Some days it seems Apple can't make anything in sufficient quantity except, perhaps, mail-order catalogs and angry dealers.

Then, on other days, things look a lot brighter. According to an extremely reliable source, the Newton project is right on schedule for the promised introduction during the first half of the year. This should slow down the rumors that the Newtons won't appear until the fourth quarter.

Knife awards. Just when you thought you'd read the last year-end award list, here's Mac the Knife with two of his own. The winner of his "They Just Don't Get It" award goes to a company (which shall remain nameless to protect the guilty) that has recently announced plans for a series of interactive CD-ROM titles based on live models from one of the so-called men's magazines. The press release tried to maintain a businesslike tone but lost it with the promise "to yield the highest level of performance within the technology."

The "Most Likely to Be a Smash Hit for No Known Reason" award goes to the "Star Trek" and "Star Trek: The Next Generation" audio clips and screen-saver packages. For those who recognize a real classic when they see one, there's also a similar "2001: A Space Odyssey" set. □

When you've recovered from getting down with the industry, share what you learned with the Knife at (415) 243-3544, fax (415) 243-3650, MCI (MactheKnife), AppleLink (MacWEEK) and CompuServe/ZiffNet/Mac. Depending on what you heard, there could be a MacWEEK mug in it for you.

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12MB	+	+						
10MB	+	+	+	+				
8MB	+	+	+	+				
6MB	+	+	+	+	+	+	+	+
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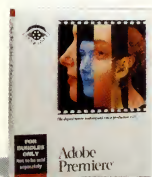
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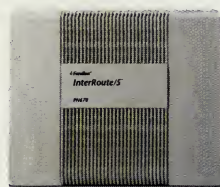


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